AN ORGANIZATION-LEVEL PUBLIC RELATIONS EVALUATION MODEL IN THE CONTEXT OF ECONOMIC VALUE

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This dissertation is dedicated to my parents, Gilhwan Kim and Bonsuk Lee, who instilled in me the determination to pursue this program, to my parents-in-law, Eunje Kim and Aeja Oh, who helped me in every way throughout this program, and to my wife, Heera, and my son, Gihyun, who gave me every reason to complete this long program.

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TABLE OF CONTENTS

page

ACKNOWLEDGEMENTS iii

LIST OF TABLES vii

LIST OF FIGURES x

ABSTRACT xii

CHAPTERS

1 INTRODUCTION 1

Arguments of This Study 4
The Purpose and Overview of This Study 6

2 LITERATURE REVIEW 8

The Need for Accountability 8
  The Economic Value of Public Relations 8
    The need for the economic way of thinking 8
    Previous economic research 11
  The Demand for the Bottom-Line Perspective 12
Detecting Opportunities in Evaluation Research 15
  Evaluation Research Explication 15
  Reviewing Public Relations Evaluation 19
    Previous research and weaknesses 19
    The categorization of public relations evaluation 22
  The Need for the Organization-Level Evaluation 24
    Too much dependence on program evaluation 24
    Changing trends and the need for the organization level evaluation 26
    The measurement of the economic impact 28
Setting Goals for the Setup and Hypotheses 30
  Setting Goals for Measurement 30
  The Primary Goal and Secondary Goal 31
  Public Relations Expense and the Public Relations Goal 33
  The Public Relations Goal and the Organizational Goal 38
  Economic Models in Other Managerial Fields 41

Market Share and Returns 45
The Specification of Models and Research Questions 46
Specifying the Model.. 46
Public Relations Expense as an Observed Variable 51
Public Relations Expense as a Latent Variable........................... 52

3 METHODOLOGY 55

The Research Overview 55
The Research Population.. 55
The Survey Instrument... 56
Operationalization and Data Collection.. 58
Specific Measures for Collecting Public Relations Expense 61
Using Secondary data, and Validity and Reliability 63
Data Tabulation and Analysis.. 66

4 OUTCOME 70

Sample Description.. 70
Reliability and Validity... 72
Hypothesis Testing.. 80
Model Fittings.. 81
Hypotheses... 89
Research Questions.. 98
Research Question One... 98
Research Question Two 103
Research Question Three 109
Research Question Four 111
Research Question Five 130

5 DISCUSSION 141
Conclusion...141
Causal Relationships among Variables......................................141
Elaboration upon the Proposed Model 145
Limitations and Suggestions for Future Research............................. 147
Managerial and Teaching Application... 149

APPENDICES

A INVITATION LETTER 156

B SURVEY QUESTIONNAIRE 158

REFERENCES...165

BIOGRAPHICAL SKETCH.. 178

LIST OF TABLES

Table page

1. The Categorization of Public Relations Evaluation 23

2. The Change of Trends and Development in Public Relations in the Corporate level 27

3. Sample Description of Participating Companies 71

4. Testing Reliability Using Internal Correlations (Cronbach's Alpha) and Squared Multiple Correlations (SMCs) in the Confirmatory Factor Analysis (CFA) 74

5. Sample Correlations of Eight Reputation Components and Revenue Data 75

6. The Outcome of Confirmatory Factor Analysis (CFA) for Eight Reputation Components 78

7. Sample Correlations in the Structural Equation Model (SEM) for Hypothesis Testing 82

8. The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level 84

9. The Outcome of the Two Stage Model of Measuring the Economic Value of Public Relations at the Organizational Level Using a Nonrecursive Parameter (Model A) and a Parameter from Market Share to Reputation (Model B) 88

10. Sample Correlations of Variables in the Model Using Raw Reputation Scores Instead of Using the Increasing and Decreasing Rate 92

11. Sample Correlations of Three-year Data 92

12. The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level When Raw Reputation Scores Were Used Instead of the Increasing and Decreasing Rate 94

13. The Outcome of Three-year Analysis of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level 97

14. Sample Correlations of One-year and Three-year Data in the Model Without Reputation 99

15. The Outcome of the Model Measuring the Direct Impact of Public Relations Expense on the Company's Revenue with One-year Data (Model A) and Three-year Data (Model B) 102

16. Sample Correlations of Variables in the Model Including an Unobserved Public Relations Expense and Observed Eight Public Relations Expense Items 104

17. The Outcome of the Bottom-line Evaluation Model at the Organizational Level Using Public Relations Expense Data as a Latent Variable 107

18. Total Efffects of Public Relations Expense on Reputation and Revenue 110

19. Sample Correlations of Variables for Sevice (n=64) and Manufacture Companies (n=93) 112

20. The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations in the Organizational Level between Service Companies (n=64) and Manufacture Companies (n=93)..113

21. The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C That Makes Every Parameter the Same for Service and Manufacture Companies Including Variances and Covariances 115

22. Sample Correlations of Variables for Consumer Companies (n=90) and Industrial Companies (n=67) 118

23. The Outcome of the Two-stage Model of Measuring the Economic Impact of Public Relations in the Organizational Level between Consumer Companies and Industrial Companies 119

24. The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C That Makes Every

Parameter the Same for Consumer and Industrial Companies Including Variances and Covariances 121

25. Sample Correlations of Variables for High-reputation (n=48) and Low-reputation Companies (n=47) 123

26. The Outcome of the Two-stage Model of Measuring the Economic Impact of Public Relations in the Organizational Level between High-reputation and Low-reputation companies.......................... 124

27. The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C That Makes Every Parameter the Same for High-reputation and Low-reputation Companies including Variances and variances 125

28. Sample Correlations of Variables for High-revenue (n=47) and Low-revenue Companies (n=47).......................................127

29. The Outcome of the Two-stage Model of Measuring the Economic Impact of Public Relations in the Organizational Level between High-revenue and Low-revenue companies...............................129

30. The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C That Makes Every Parameter the Same for High-revenue and Low-revenue Companies including Variances and Covariances 131

31. Estimated Parameters of Regression Models for the Relationship between Public Relations and Reputation with One-year Data 135

32. Estimated Parameters of Regression Models for the Relationship between Reputation and Revenues with One-year Data............. 136

33. Estimated Parameters of Regression Models for the Relationship between Public Relations and Reputation with Three-year Data....138

34. Estimated Parameters of Regression Models for the Relationship between Reputation and Revenues with Three-year Data............139

35. Estimated parameters of Seemingly Unrelated Regression (SUR) estimation...140

LIST OF FIGURES

Figure page

1. The Two-Stage Model of Measuring the Economic Value of Public Relations in the Organizational Level 52

2. The Evaluation Model at the Organizational Level Using Public Relations Expense Data as a Latent Variable.............................. 53

3. A Confirmatory Factor Analysis with Reputation Data for Reliability and Validity Check... 77

4. The Analysis of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level. Standardized Estimates.. 83

5. The Analysis of the Two-stage Model with a Nonrecursive Relationship between Reputation and Revenue. Standardized Estimates.. 86

6. The Analysis of the Two-stage Model with an Added Parameter from Market Share to Reputation. Standardized Estimates............. 87

7. The Analysis of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level with Raw Scores of Reputation.. 93

8. The Analysis of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level Using Three-year Panel Data from 1995 to 1997.................................. 96

9. The Analysis of Direct Impact of Public Relations Expense on Revenue with One-year Data When Reputation Is Not Included......100

10. The Analysis of Direct Impact of Public Relations Expense on Revenue with Three-year Data When Reputation Is Not Included..101

11. The Analysis of the Two-stage Model of measuring the Economic Value of Public Relations Using Public Relations Data as a Latent Variable 105

12. Three Possible Models for Measuring Each Relationship 133

13. The Example of Measuring the Bottom-line Impact of Each Public Relations Function..150

14. The assumed model for IMC evaluation.. 151

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Current issues in the public relations field, such as management's insistence on accountability, the focus on return on investment, and the bottom-line impact of public relations and communications, have changed existing public relations practices. Vague assurances of goodwill and invisible long-term impact can no longer persuade vigilant CEOs of the value of public relations. They expect and demand measurable contributions such as an increase in sales and profitability.

This study establishes a two-step model to measure the economic value of public relations by testing two relationships: 1) the impact of public relations expense on reputation as a goal of public relations, and 2) the economic impact of reputation on revenues as companies' bottom lines.

This study used both secondary analysis and a mail survey. The survey was sent to *Fortune 500* Corporations. All other reputation and economic data were collected from existing databases for economic analyses. The relationships were tested using a structural equation model.

The proposed model showed an appropriate fitting and was statistically significant. All three hypotheses were supported. By integrating the results of the hypothesis tests, the proposed two-stage model for measuring the economic impact of public relations activities was supported. Public relations expense affects the company's reputation positively and the company's reputation impacts the company's revenue positively. Thus, public relations expense indirectly affects the company's revenue. The significance of this research lies in demonstrating empirically that public relations activities can positively affect the company's bottom-line.

CHAPTER 1
INTRODUCTION

Public relations expense[1] has been rising over the past five years ("Survey shows," 1997; Thomas L. Harris/Impulse Research Agency Survey, 1993-1997; Troy, 1993;). In 1997, public relations expense increased 30 percent over 1996 among companies that participated in the survey (Thomas L. Harris/Impulse Research Agency Survey, 1997). This survey verifies the industry trend that more companies are increasing their public relations budgets and improving the status of public relations. This trend also can be attributed to the call for crisis and issue management, more reliance on public relations specialists to handle the rapidly changing society, and the understanding of the role of communications in the world marketplace ("Survey shows," 1997). However, as public relations expense has increased, demands of CEOs also have risen.

Interests in the economic consideration of public relations activities have elevated in accordance with budget increases. For instance, the response rate of the 1995 Thomas L. Harris/Impulse Research Public Relations Survey that investigated public relations expenses of client companies was 17 percent. Only 1,021 out of 6,000 companies completed the questionnaire. Public relations expense has not been disclosed because it traditionally has been considered proprietary information of the company. However, in 1996, the response rate of the same survey was 33.8 percent. Surprisingly, the 1997 survey obtained a 51 percent response rate. A total of 2,042 out of 4,000 companies completed the questionnaire (Thomas L. Harris/Impulse Research Public Relations Agency Survey, 1997). This could be interpreted as an expression of public relations practitioners' desire to support public relations' value to the management.

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[1] This phrase also could be called the public relations/public affairs or public relations/communications budget. Public relations expense was defined as the money spent by the public relations department. The annual public relations budget is divided into 'internally managed public relations programs exclusive of salaries and overhead' and 'external programs provided by public relations/affairs agency (total budget).' In this study, public relations expense will be clearly defined with specific expense items.

With the drastic increase of public relations budgets, current issues in the public relations field, such as management's insistence on accountability, the focus on return on investment, and the bottom-line impact of public relations and communications, have changed existing public relations practices (Campbell, 1993; Johnsson, 1996, 1998). Vague assurances of goodwill and its invisible long-term impact can no longer persuade vigilant CEOs and upper management. They expect and demand more substantial contributions such as an increase in sales and profitability. It is time for public relations practitioners to have more resources to cope with this difficult situation.

However, public relations has not exhibited scientifically stringent methods with regard to proving the effects of public relations activities (Ehling, 1992; Hon, 1997a; Hon, 1997b), even though more and more CEOs demand that public relations expenditures result in an impact on the bottom line (Hon, 1997a). Public relations' unscientific basis originated from the journalism tradition that has dominated public relations activities since Ivy Lee. Lee was an ex-journalist who laid the groundwork of modern public relations, and started the public information model of public relations in response to muckraking journalism (Dozier & Ehling, 1992; J. Grunig & Hunt, 1984). Giving accurate information to the press was the most critical task of public relations practitioners, and Lee did not conduct scientific research for public relations.

Most of the time, objective reports or communication activities themselves have been more important than attitude change, persuasion, or negotiation with publics. Practitioners have felt satisfied with the communication activities themselves irrespective of the outcomes of these activities. This journalistic trend has not provided a scientific evaluation of what practitioners have done. Practitioners have not measured the goal achievement by managerial standards such as management-by-objectives (MBO), cost-benefit analysis (Grunig & Hunt, 1984), and other operational research (Dozier & Ehling, 1992) usually used as standard outcome measurements in other managerial fields. Operation research is the device that maximizes the outcomes and minimizes the costs for those outcomes (Dozier & Ehling, 1992), which is often called management science.

Even after setting up the new generation of social scientific public relations, led by Edward Bernays who introduced the social scientific methodology into public relations and developed the basis for two-way communications (J. Grunig & Hunt, 1984), the tradition of unscientific evaluation has not been rectified. The evaluation manual for the Public Relations Society of America (PRSA) members (Norton, 1977) described that measuring quantitative outcomes usually used in scientific research was impossible in public relations. This suspicion about the elusiveness of evaluation has dominated public relations research up to now ("Getting a Grip," 1998).

Since a 1977 national conference on measuring the effectiveness of public relations (Broom, 1977; Franzen, 1977; Grass, 1977; J. Grunig, 1977a, 1977b; Lerbinger, 1977; Marker, 1977; McElreath, 1977; Stamm, 1977; Tichenor, Donohue, & Olien, 1977; Tirone, 1977), evaluation has been a main area of study in public relations research (Hon, 1997b). However, progress in evaluation research has been slow, even though some researchers have tried to apply social science measurements and economic theories to public relations evaluation (Broom, 1977; Ehling, 1992). Evaluation research is largely under-utilized and its potential for the most part has been unrealized.

Arguments of This Study

Furthermore, another issue relevant to public relations evaluation is the unbalanced development between program-level and organization-level evaluations. Program-level evaluation focuses on the success of programs themselves and organization-level evaluation has to do with the contribution and impact of programs to the organization. Increasingly, many CEOs insist on tangible outcomes for their investment in public relations (Hon, 1997a). Public relations is no longer just establishing good relationships apart from concerns about a company's bottom line. Without supporting its contribution to the organization such as revenues and profitability, the public relations function may suffer accountability problems (Campbell, 1993; Johnsson, 1996). Given this, measuring the value-added contribution of public relations activities becomes an imminent task of public relations practitioners and academicians.

Measuring effectiveness in public relations as attitudinal or behavioral change has been already discussed in the context of organizational impact (Dozier and Ehling, 1992; J. Grunig & Hunt, 1984). However, the direct relationship between those impacts and the company's returns has not been tested. Building relationships with publics and impact variables such as attitudinal and behavioral change have been introduced as long-term and often intangible bottom-line contributions (Grunig, 1992). However, more concrete bottom-line contributions should be measured in terms of strategic and organization-level benefits such as profits or some financial returns (Ehling, 1992).

Grunig (1998) argued that the economic contribution of public relations is one dimension of public relations' value. After establishing "a theory of excellence" and effectiveness in public relations in the 1992 Excellence Study sponsored by the International Association of Business Communicators (IABC) Research Foundation (J. Grunig, Dozier, Ehling, L. Grunig, Repper, & White, 1992), J. Grunig and his colleagues conducted surveys of public relations executives and CEOs and in-depth case studies to explore public relations' value (J. Grunig, 1998). They found that public relations' value is the integration of economic returns and maintaining good relationships with publics:

> Public relations may make an indirect contribution to organizational effectiveness. To the extent that this function serves as the conscience of the corporation, it emphasizes social responsibility. As a result, throughout our study we have looked at the bottom line in this way: a combination of traditional financial return and the risks associated with the organization's long-term relationships. (J. Grunig, 1998, p. 20)

This study deals with economic returns as the meaning of bottom-line contribution. Relating public relations value to the company's bottom line deserves a more scientific explication than leaving the task to common sense or intuition. By clarifying the causal links between public relations expenditures and contribution to the bottom line, this study can lead to the development of truly scientific evaluation in public relations.

The Purpose and Overview of This Study

The literature review of this study has four parts. First, this study examines why the economic value of public relations and its bottom-line contribution should be measured. Second, categories of public relations evaluation used in previous studies are discussed. Third, how to measure the economic value of public relations is explicated by defining public relations and organizational goals. Finally, economic models are specified to test hypotheses and to answer research questions.

This study establishes a two-step model to measure the economic value of public relations: 1) measuring the impact of public relations expense on reputation as a goal of public relations, and 2) measuring the economic impact of reputation on revenues as companies' bottom lines.

The first purpose of this study is to establish causal relationships among public relations expense, the goal of public relations (reputation), and contribution to the organization (revenue). And, based on those causal relationships, the second purpose of this study is to elaborate the economic value of public relations on companies' bottom lines. These two purposes are closely intertwined in the organization-level public relations evaluation model.

CHAPTER 2
LITERATURE REVIEW

The Need for Accountability

The Economic Value of Public Relations

The need for the economic way of thinking

The social value of public relations has been more emphasized than the economic value of public relations (Cutlip, Center, & Broom, 1985; Culbertson, Jeffers, Stone, & Terrell, 1993; Newsom & Scott, 1985; Moore & Kalupa, 1985). Culbertson et. al. (1993) presented three reasons for economic ways of thinking in public relations. First, the function of public relations cannot get away from the economic way of thinking. People all live by economic principles. People need resources for accomplishing something and to maximize their effectiveness and efficiency through intended programs. Second, there are four major economic realms: the household sector, the business sector, the government sector, and the foreign sector. These realms are related closely to the environment of public relations in systems theory, which defines public relations as a boundary function between management subsystems and outside environments (Grunig & Hunt, 1984). And, two-way communications with the environment, which emphasizes the balanced communication between an organization and the public, is essential in modern public relations (J. Grunig & Hunt, 1984; J. Grunig & L. Grunig, 1992). Thus, public relations cannot evade the economic reality because

~~Grunig, 1992). Thus, public relations cannot evade the economic reality because~~ it operates in these economic realms. Third, economic concepts[2] such as efficiency, equity, marginal utility, elasticity, and externalities can be related directly to public relations practices. Ehling compared the social value of public relations with the economic value:

> To enunciate the social worth of public relations is one thing. To demonstrate the economic worth of these activities is another matter. The former has to lay the basis for legitimization of public relations; the latter has to provide the managerial basis for the departmentalization of these endeavors. Social and economic worth are closely bound at the organizational level, but they can be separated analytically and operationally at the managerial level. Scant attention, unfortunately, has been paid [to] the economic side of public relations management in literature identified as "public relations body of knowledge." (Ehling, 1992, p. 618)

Measuring the economic value of public relations is needed to showcase the evidence of a positive relationship between the value of public relations and the organization's bottom line, a link that has not been empirically tested. Grunig (1977) discussed the seriousness of this subject in his overview of a special issue of Public Relations Review:

> For many years public relations programs have been among the first items to be cut from a stringent budget. Likewise, they have been criticized by the media, regulatory bodies, and the public as unnecessary expenditures whose only function is to "polish the image" of a corporation or to "sell something of questionable value."
>
> Public relations people have argued, in rebuttal, that public relations is misunderstood. They claim that communication with the public is good for

---

[2] Marginal utility means "less and less satisfaction is obtained from each additional item consumed in a given time period " (Culbertson et. al., p.116). Elasticity is the proportional change in productivity and satisfaction against the change of other factors. Externalities mean "positive or negative effects of a trade between sellers and buyers on a third party who is not part of the trade" (p. 118).

> both the public and the corporation, that public relations can improve corporate public understanding, and that public relations perhaps can increase corporate revenue. Management and critics of public relations, however, are seldom content with that answer. (p. 5)

Given this reality, public relations academicians and practitioners should have developed measurement systems to demonstrate the economic value of public relations activities. However, not much research has been conducted to achieve those goals.

Ehling (1992) provided several reasons for why public relations has been exempted from rigorous analyses (other managerial fields have long embraced scientific analyses such as management-by-objectives [MBO], cost-benefit analysis, simplified programming, and program-evaluation-review-technique [PERT]). The first reason is “operation reducibility.” Public relations activities were assumed to be technical tasks rather than managerial, decision-making practices. The second reason is “debit affordability.” Public relations budgets were counted as administrative overhead. Public relations expense was considered a financial loss, not an investment. The third reason is “outcome intangibility.” Practitioners thought public relations’ outcomes could not be measured. They thought the benefits of public relations only could be measured as the long-term unquantifiable value. Thus assigning a dollar value was thought impossible. The fourth reason is “goal displacement and functional subserviency.” This reason is related to the marketing-dominant perspective. Under this argument, public relations only exists for serving the needs of other functions.

Besides these four reasons, dependence on intuition among public relations practitioners also can be a factor that has inhibited scientific measurement in public relations. From the case studies of public relations executives and CEOs in the Excellence Study, J. Grunig (1998) concluded that public relations practitioners still preferred intuition to the economic valuation of public relations:

> Still other participants believed that matching dollar spent with dollar returned was unnecessary. Some did not see a compelling need to measure their contributions because they had what we determined was a confidence born of a history of success. They knew they added value, so they did not perceive a need to justify their existence in monetary terms. (p. 46)

Previous economic research

Grunig and Hunt (1984) introduced economic decision-making techniques in their public relations textbook such as cost-benefit analysis, expected-value analysis, and simplified programming.[3] They acknowledged the need of a theory to connect program-level evaluation to contributions to the bottom line. But they left those tasks for future study.

One goal of the Excellence Study was to determine the economic value of public relations (Grunig et al., 1992; Lindeborg, 1994). In the Excellence Study, economic benefits are measured by transferring the effectiveness of communication programs into economic terms (Ehling, 1992). However, this cost-benefit theory mostly from expected-value measurements has not received sufficient attention because of the difficulty of subjectively assigning dollar values.

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[3] Cost-benefit analysis, expected-value analysis, and simplified programming are basic decision making methodologies in the managerial field. These methods make a decision by comparing assigned benefits with costs for programs. Usually benefits are assigned in a subjective way.

The quantification of economic impact in public relations started with Ehling (1992). Ehling (1992) used the cost-benefit method for pioneering the measure of the economic value of public relations. He argued that the economic value of public relations seldom has been the topic of public relations research:

> Such outlays for public relations activities beg an obvious managerial question: What is being accomplished in monetary terms? Answers to this question are generally muted, murky, and often misleading. In short, a review of the literature and of the practice finds no specific method in use today that relates in measurable terms the resources used (computed in costs) and economic benefits realized from public relations expenditures. (p. 618-619)

Regardless of his benchmarking trial, how to measure public relations effectiveness and how to apply a theory to the real world have not been widespread topics in public relations research. Ehling's mathematical model adopted existing cost-benefit theories without real data. In fact, previous economic research has not been welcomed because of the lack of practitioners' confidence and the difficulty of application.

The Demand for the Bottom-Line[4] Perspective

Accountability in public relations is the most critical challenge public relations practitioners are facing (Smith, 1996; Gordon & Shell, 1992). In spite of the increased interests in public relations and fast-growing budgets, the possibility of marginalization especially during an economic recession may forecast a gloomy future for public relations. An era of mergers and acquisitions, downsizing and reengineering, and increasing demand for bottom-line contributions push public relations into a survival game (Webster, 1990). Thus, applying the same cost-related standard as other organizational functions and demonstrating the bottom-line value of public relations have become increasingly important (Gordon & Shell, 1992; Webster, 1990).

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[4] Bottom-line can be defined as measurable benefits to the organization such as "enhanced cash flow, improved share price and sharehold value, greater productivity, more sales, better market shares, less employee turnover and higher earnings per share" (Webster, 1990, p. 18).

> Because of the nature of its works, public relations is sometimes unable to do detailed planning. And many experienced people say it is unreasonable to expect PR to match the accountability of engineering, manufacturing, sales or personnel. They may be right, but it is becoming increasingly difficult to simply claim that public relations works in the "soft side" of the business. Equally frustrating, public relations often finds itself unable to explain its value, methods and tools within the organization. (Smith, 1996, p. 15)

This accountability problem cannot be solved by counting the number of clippings or qualitatively analyzing those contents and consumers' minds, techniques the industry has pursued until now (Elliot, 1996). Instead, connecting results to the company's bottom-line is the main task to solve the accountability problem. Beliefs that public relations is inherently not measurable are dwindling, and increasingly practitioners believe that public relations can be measured to show contributions to the bottom line (Webster, 1990). Thus, the demand for measuring bottom-line impact is widespread in the public relations journals (Bissland, 1990; Campbell, 1996; Gordon & Shell, 1992; Hon, 1997a; Newlin, 1991; Smith, 1996; Webster, 1990). However, this is an area that has been discussed frequently, but never has been practiced seriously (Newlin, 1991).[5]

Each program evaluation is important in measuring the success of specific programs, but there is one critical limitation -- no measured relationship to the bottom-line impact (Hon, 1997a). Hon argued that previous evaluation research focused on effects on the public rather than the contribution of public relations to organizations (Campbell, 1993; Ehling, 1992; Johnson, 1994; McElreath, 1977; Winokur & Kinkead, 1993). Although it can be argued that the effects on the public can be connected to an organization's bottom-line, the tools for demonstrating the connection have been elusive (J. Grunig et al., 1992). Even many public relations practitioners have thought the connection is almost impossible to measure and have emphasized the impact of intangible factors and prevention effects (Lesly, 1991).

However, pressures for measuring the bottom-line impact are continuously increasing from the outside and inside. "More and more managers are asking their public relations staffs to add up the bottom line -- the equivalent of profit or loss. What has public relations done to make organization more effective?" (J. Grunig & Hunt, 1984, p. 115). Grunig and Hunt described the need for bottom-line perspectives:

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[5] Return on investment (ROI) was investigated once in the Excellence Study. It found an average 184% ROI and 300% ROI in case of excellent companies. However, these results came from interviews with CEOs in a subjective way. Quantitative data were not used to measure ROIs. One program called 'Sales Projector' is developed by Inquiry Handling Service (IHS) to demonstrate ROI. If some data such as the average dollar cost per product, the estimated market share and the number of leads a particular medium produced are entered, the program can calculate the expected sale. However it is hardly called a pubic relations evaluation program (Hauss, 1993).

> Public relations was accepted without proving its value to the organization or without showing that something had happened as a result of spending the money allocated to the department. Directors of public relations who were asked to prove their department's worth could serve up a snowjob – in fact, a snowstorm of press clippings. (p. 179)

J. Grunig also indicated the deficiency of the organization-level and social-level evaluations in his recent work on public relations' value (J. Grunig, 1998). He determined that public relations can be evaluated at a minimum of four levels: program, functional, organizational, and societal. Advertising value of news clippings, readership, surveys or experiments of program effects were considered program evaluation and insufficient indicators for overall effects of public relations activities.

Overall, showing reasonable relationships between public relations activities and organizational goals has become a critical key in measuring public relations' value. Measures proving those relationships can show the bottom-line impact of public relations.

Detecting Opportunities in Evaluation Research

Evaluation Research Explication

Weiss (1972) defined the purpose of evaluation research as "measuring the effects of a program against the goals it set out to accomplish as a means of contributing to subsequent decision making about the program and improving future programming" (p. 4). Freeman (Caro, 1997) argued, "Evaluation research is now an established part of the complex process that engages planners and policy makers responsible for determining which service programs should be implemented, expanded, and terminated" (p.ix). Caro (1977) defined program evaluation as having two essential dimensions: "One concerned with judgment and the other with information. Program evaluation produces judgments regarding the degree to which desired outcomes have been achieved or can be achieved. It leads to conclusions regarding the worth of organized efforts" (p. 3). From the definitions of general evaluation research, evaluation is defined as the rigorous process for decision making for the organization.

Rossi and Freeman (1993) divided evaluation research into program effectiveness and program utility assessment (impact assessment, and cost efficiency). They defined program utility assessment as the study of the effectiveness (impact) and efficiency (cost to benefits ratios or cost effectiveness) of a program. They argued that the usefulness of programs is very hard to justify without presenting effectiveness and efficiency measures. Impact assessment is dealing with the program's overall impact. Program effectiveness represents program-level evaluation and program utility assessment does organization-level evaluation.

Scriven (1967) introduced the terms "formative" and "summative" evaluation. "Formative evaluation is designed to improve a program while it is still fluid; summative evaluation is designed to appraise a program after it is well established" (p. 43). This categorization also can be found in other textbooks (Weiss, 1972; J. Grunig & Hunt, 1984; Broom & Dozier, 1990).

Caro (1977) categorized evaluation into the program and organization context in his synthesis of evaluation literature. The program and organizational context imply program-level evaluation and organization-level evaluation. He also defined four traditions of formal evaluation: accreditation, program analysis, evaluation research, and cost analysis. Accreditation makes public judgments whether some professional requirements are met in programs of public interest. This method compares programs with existing standards that are established by professionals. Program analysis investigates actual performance rather than program potential (accreditation). Evaluation research focuses on outcomes of treatment. Cost analysis compares the overall amount spent with benefits achieved. These four traditions explain diverse approaches for evaluation.

Scriven (1991) defined effectiveness and efficiency in his evaluation dictionary:

> Effectiveness: Often but not necessarily used to refer to the conclusion of a goal-achievement evaluation, with all its limitations. --- Although effectiveness can be construed more generally as referring to achieving an outcome that may not have been part of the aims of a program, it always refers to some goal, even if not the original one; it is a means-end notion.
>
> Efficiency: Efficiency goes beyond effectiveness by bringing in a reference to the amount of resources involved. It implies the absence of wastage for a given output; It can be increased by increasing the output for a given input. It does not guarantee that the results are of any useful size. For this reason, in many contexts, planners conventionally require that a social intervention must be both effective and efficient. (p. 129)

In measuring efficiency, cost-analysis approaches such as cost-benefit analysis and cost-effectiveness analysis have been most popular. Cost-effectiveness analysis is defined as "the evaluation of alternatives according to both their costs and their effects with regard to producing some outcomes or set of outcomes" (Levin, 1983, p. 17). And cost-benefit analysis can be defined as "the evaluation of alternatives according to a comparison of both their costs and benefits when each is measured in monetary terms" (Levin, p. 21). Cost-effectiveness analysis is especially useful for comparisons of different strategies and cost-benefit analysis assigns dollar values to the benefit (Levin, 1983).

By integrating all previous discussions, evaluation research can be divided into these categories: (1) timing of evaluation: summative and formative evaluation (Brewer, 1983; Scriven, 1967), (2) two levels of evaluation: the program-level and the organization-level (Caro, 1977; Rossi and Freeman, 1993), and (3) effectiveness and efficiency (Brewer, 1983; Caro, 1977; Revin, 1983; Scriven, 1991). Effectiveness is measuring the goal achievement and assessing the impact, and efficiency is measuring the size of impact such as cost-benefit or cost-effectiveness.

Measuring the economic value of public relations is related closely to summative effectiveness and efficiency measures in the organization-level evaluation. This value could be inferred from the economic contribution of the goal achievement and impact to the organization's bottom line. However, the groundwork of evaluation research in public relations is unstable. The use of inconsistent concepts and the lack of the organization-level evaluation make public relations evaluation difficult. Thus, the next sections deal with the categorization of public relations evaluation and explain the need for the organization-level evaluation.

Reviewing Public Relations Evaluation

Given discussions of general evaluation research, public relations evaluation also should be the same rigorous process for making a decision about initiating or continuing programs. Often public relations evaluation lacks the meticulous processes explicated in general evaluation research. Thus, the weaknesses of evaluation research in the field of public relations are examined to find an improved way of evaluation research.

Previous research and weaknesses

Dozier (1984) argued in a survey of practitioners in the San Diego area that there are three types of public relations evaluations: “scientific impact evaluation,” “seat-of-the-pants evaluation,” and “scientific dissemination evaluation.” But, all three evaluation methods determined by Dozier lack an organizational bottom-line perspective. When CEOs of companies ask, “What have you done for me lately?” (Hon, 1997a), practitioners should be able to offer evidence of the bottom-line impact of public relations.

Dozier and Repper (1992) distinguished environmental scanning and evaluation research in public relations research. In evaluation research, they categorized three areas: preparation evaluation, implementation evaluation, and impact evaluation. Translated by the terms used in this study, preparation study is formative evaluation, implementation evaluation is the program-level evaluation and impact evaluation is the organizational level evaluation. These three evaluation research perspectives are originally the idea of Cutlip, Center, and Broom (1985). However, their differentiation between the program-level and organization-level evaluation is not clear.

McElreath (1977) divided frameworks of public relations evaluation into a 'contingency model' and an 'open-system model' based on the level of involvement with environments. The former represents a unscientific method while the latter uses a scientific one. Bissland (1990) categorized public relations evaluation into measures of communication, measures of intermediate effect, and measures of organizational goal achievement. McEleath and Bissland's idea was closely related to the organization-level evaluation.

In details, he categorized evaluation in public relations into 1) measures of communication output such as media placement and number of clippings; 2) measures of intermediate effect, including awareness, attitude, understanding, and behavior; and 3) measures of organizational goal achievement, such as the amount of sales, the amount of funds raised, and legislation passed. He was one of the few researchers who emphasized the bottom-line approach in public relations evaluation.

Norton (1977) specified three major forms of evaluation: a comprehensive study of an organization's public relations program, a regular review of the entire public relations program, and the short-term review that should follow all activities. All of these evaluations are confined to the category of program evaluation. There are no impact assessments on public relations value or contributions to the organization's effectiveness and bottom line. Norton also declared that public relations cannot apply an exact science methodology into evaluation research.

Kirban (1983) criticized the confusion between "measuring activities and effects." He divided measuring activities and effects into output measurement and impact measurement. From his viewpoint, measuring program activities, such as number of clips, total air time, and the number of audiences reached, cannot be a reliable judgment. He emphasized the impact-oriented measurement that can be interpreted as the organization-level effectiveness. Even though his definition of impact includes brand awareness, corporate reputation, interest, and sales, he did not clarify the difference between effectiveness and efficiency at the organization level.

General problems of categorizing public relations evaluation can be summarized. First, effectiveness and evaluation have been used interchangeably. Effectiveness is one of the components of evaluation. Thus, measuring effectiveness does not mean a comprehensive evaluation. Second, the definition between effectiveness and efficiency is unclear. Sometimes effectiveness has been interpreted in a cost-efficient manner. While efficiency describes cost-effectiveness, effectiveness is related to goal achievement. Third, researchers have misused "quantification" in evaluation research. It is not impossible to quantify public relations activities in view of evaluation research. For example, perceptions and attitude changes always can be quantified with psychometric scales. Yet, what is really difficult is measuring the relationship between public relations activities and their contributions to the organization. Fourth, the usage of output and outcome is vague. Sometimes, public relations outcomes, impact, and effectiveness have been used interchangeably (Lindenmann, 1990; Holmes, 1996). But, outcome and output are not conceptually defined in evaluation research texts. Vaguely, output means a short-term effect of programs and outcome means a long-term effect for the organization. For clarity, the terms of program-level and organizational-level evaluations will substitute for output and outcome in this study.

The categorization of public relations evaluation

To satisfy the coverage of comprehensive evaluation, evaluation in public relations can be categorized into six cells by three dimensions (formative/summative evaluation, program level/organizational level, effectiveness/efficiency). This categorization originates from general evaluation research discussions in previous section.

From Table 1, formative evaluation (Cell1 and Cell 2) and program-level evaluation (Cell 3 and Cell 4) have been conducted most of the time in the public relations field. But, organizational-level evaluation (Cell 5 and Cell 6) rarely has focused on among practitioners and scholars except for some effectiveness studies (McElreath, 1977; J. Grunig, et. al., 1992) and an efficiency study (Ehling, 1992).

Table. 1
The Categorization of Public Relations Evaluation

	Effectiveness	**Efficiency**
Formative evaluation	Cell (1) Assessing expected program effectiveness. Modifying the program through program assessment. Identifying strategic constituencies.	Cell (2) Selection of a cost-efficient program. The application of media planning strategy such as message-vehicle cost per thousand. Budgeting and decision Making.
Summative • **Program Context**	Cell (3) Media coverage. Number of clippings. Number of participants. Cognitive effect, Attitude change, Behavioral-intention change after conducting program.	Cell (4) Program efficiency. Material cost Effectiveness. Cost effectiveness of Program compared to other programs. Cost-benefit analysis of programs.
Summative • **Organization Context**	Cell (5) Impact assessment to the organization. Attitude-behavior change about the organization. The measurement of public relations effectiveness to the organization such as reputation, relationship, public opinion etc.	Cell (6) Cost-benefit analysis in the organizational level. Cost effectiveness analysis in the organizational level. Economic impact of public relations expense to the company's bottom line .

Note. This table is organized by the author.

In formative evaluation, the program and organization context are not discussed because formative evaluations focuses on the program level.

The reason for pursuing efficiency[6] assessment lies in the presence of limited resources. Without presenting cost efficiency, public relations expense always will be curtailed when the organization faces economic recession and downsizing (Hon, 1997a). Also, it is better to evaluate public relations activities with an organization's own objective standard, rather than depending on other managerial standards. Measuring efficiency at the organizational level is an inevitable task for both practitioners and scholars (Geduldig, 1986).

The Need for Organization-Level Evaluation

The environment for measuring organization-level evaluation has ripened with the mounting needs of public relations practitioners. The Excellence Study (Grunig, et. al., 1992) also has prompted researchers to develop organization-level evaluation. However, organization-level evaluation has been rarely dealt with in empirical research. Admittedly, scholars have not devised the methodology for measuring effects at the organizational level.

Too much dependence on program evaluation

In Hon's (1997a) study, which involved interviewing 32 public relations executives and 10 CEOs and other managers to explore the effectiveness and value of public relations, public relations effectiveness was conceptualized at four levels: individual practitioners, programs (Broom & Dozier, 1990: Broom & Center, 1983; Kendall, 1996), the organization (McElreath, 1977, J. Grunig et al., 1992), and society (Culbertson et al., 1993; Toth & Heath, 1992; Deetz and Kersten, 1983). However, most evaluation textbooks have addressed exclusively the evaluation of programs.

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[6] The meaning of efficiency in this research is different from one of the presuppositions in the asymmetrical world view (Grunig, 1989). Efficiency in this research lies in the view of organization-level evaluation research, rather than the world view. This study follows the symmetrical world view in the context of establishing relationships between the public's perception of the company and returns. The meaning of efficiency is closely related to the "economically efficient" way to achieve acceptable goals and end-states (Ehling & Dozier, 1992)

Program evaluation has been over-emphasized, which is in line with criticisms of output-oriented measurement (Baer, 1979; Kirban, 1983). Kirban argued that public relations practitioners have focused on the outputs of programs such as numbers of clips, total air time, audience reached, hours expended, reply cards and the like. He argued that public relations effectiveness depends on the impact of communication strategy on the target audience, not on the outputs of activities. As a plausible set of measurable criteria, he suggested awareness, knowledge, attitude, and propensity to take actions, but did not go further to propose measures of effectiveness and efficiency at the organizational level. In a special issue on evaluation in *Public Relations Review* (1977), most evaluation research in the industry profiled focused on program evaluation only (Tirone, 1977; Marker, 1977).

Measuring opinions, attitude change, recall, and awareness, as well as analyzing publicity placement, can be very effective tools for evaluating public relations activities. However, a major limitation of these measures is the inability to link these results with performance indicators of organizations, even though public relations is facing the same standard of performance analysis as other management functions (Tirone, 1977; Ehling & Dozier, 1992).

This problem also is related to the emphasis on the technical role of public relations practitioners. Ehling and Dozier (1992) harshly criticized publicity-oriented evaluation and some textbooks (Cutlip, Center, & Broom, 1985; Lovell, 1982) that stressed technical roles in their discussion of operations research.

Changing trends and the need for the organizational level evaluation

Measuring effectiveness and efficiency at the organizational level is an inevitable process in public relations evaluation given changing trends. Table 2 showcases the change of environments and public relations trends. Ambiguity is the first challenge in public relations evaluation. Public relations practitioners may want to keep the results ambiguous to exaggerate their achievements and to evade the possibility of failure (Watson, 1994). The poor results can be sometimes embarrassing to public relations practitioners. However, CEOs increasingly want exact data and contributions to the organization (Hon, 1997a; Campbell, 1993).

According to Grunig and Hunt (1984), public relations has developed historically from one-way to two-way communication. Dozier and Ehling (1992) also talked about the weakness of journalistic trends (Botan, 1993; Ehling, 1992). Ehling (1992) criticized journalistically oriented and publicity-driven activity as “goal displacement and functional subserviency” (p. 619). Public relations’ goal was considered to be subservient to marketing or other management activities. In this context, public relations should be more business-oriented than journalism-oriented to make its function more managerial.

The social science orientation is a bridge between the journalism orientation and the business orientation in public relations. The focus on the bottom-line contribution and the measurement of the economic value of public relations is in line with the business-orientation of public relations.

Thus, it can be tentatively defined that public relations is entering a third stage (See Table 2). This new stage of public relations involves both effective and efficient activities for organizations based on public relations and

Table. 2
The Change of Trends and Development in Public Relations in the Corporate level

	Unit of Analysis	Trends	Social Responsibility	Historical Model	Focused Theory
1st	Communication process between the public and the organization	Journalism heritage	Profit pursuit	Publicity and public information model (one-way model)	Media effect theory and persuasion theory
2nd	Relationship between the public and the organization	Social science	Corporate citizen and leader	Two-way asymmetrical and symmetrical model (Two-way models)	Social science and communication theory
3rd	Organizational communication for the economic impact	Business orientation	Profit pursuit with the ethical activities	Scientific evaluation model for measuring effectiveness and efficiency	Integration of communication and management theory. Economic theory.

Note. This table is organized by the author.

management theory. Evaluation research emphasizes effectiveness and efficiency at the organization-level rather than at the program level. Contributing to the organization's bottom line is the ultimate goal of this new stage of public relations.

The measurement of the economic impact

Following the discussions of Ehling (1992) and Grunig (1998), the economic impact or value of public relations can be defined for this study as 'quantified economic contributions of the achieved public relations goal on the organizational bottom line.' The economic impact emphasizes economic value more than social value.

How to measure the economic impact of public relations can be detected from the previous discussion of evaluation research. Measuring the economic impact of public relations should be summative evaluation that makes it possible with the collection of all the existing data and economic indicators. Also, measuring the economic impact becomes possible only in organization-level evaluation. Program-level evaluation cannot measure the economic contribution of public relations to the organizational goal because it just measures the effects of each program. Finally, the economic impact of public relations can be measured through integrating effectiveness and efficiency measures. Measuring the economic impact of public relations is to materialize the achieved public relations value (effectiveness) on the organization's bottom-line with the consideration of cost (efficiency).

In fact, measuring the economic impact of public relations is closely related to efficiency measures at the organizational level because cost and returns are considered. However, the direct application of efficiency measures is not appropriate in public relations evaluation. From the previous discussion (Ehling, 1992; Grunig et al., 1992; Grunig, 1998) and its proposed definition, the economic impact of public relations is not merely related to the direct relationship between cost and its returns. Instead, it intends to represent the economic contribution of the achieved public relations value on the organization's bottom line.

Also, the direct application of the return-on-investment approach (net benefits or the ratio of investments and returns) has shown limited usefulness in public relations evaluation (Ehling, 1992) because direct goals of public relations are related to improving the reputation of an organization or maintaining good relationships with publics rather than with financial objectives such as revenues or profits.

Also using both effectiveness and efficiency measures at the organizational level is in line with the questions raised for the Excellence Study (J. Grunig et al., 1992). Two questions are answered by the Excellence Study: 1) what are the characteristics of excellent communication? and 2) how does excellent communication make an organization more effective and what is the economic worth of that contribution? In the latter question, "making an organization more effective" is the effectiveness part and showing "economic worth of that contribution" is the efficiency part of evaluation at the organizational level.

Overall, effectiveness is the goal achievement and efficiency is the size of the impact. Thus, relating effectiveness and efficiency at the organizational level gives a direction for the model setup.

Setting Goals for the Model and Hypotheses

Setting Goals for the Measurement

To sum up this chapter, the model for measuring the economic value of public relations is based on the goal-attainment perspective. This perspective is presented in the discussion of organization effectiveness [J. Grunig, L. Grunig, & Ehling, 1992; J. Grunig & Hunt, 1984; also for the summary of goals and measuring effectiveness, see Hon (1997b)]. The goal attainment perspective suggests that public relations can contribute to organization effectiveness by achieving the goal. The public relations goal does not equal the contribution to the bottom line. Instead, public relations can contribute to the bottom line by way of achieving its goal.

Setting goals for evaluation is a widely accepted methodology in public relations evaluation (Broom and Dozier, 1990; Fairchild, 1997; Hon, 1997b; Lindenmann, 1997; Pritchitt, 1994, “Getting a Grip,” 1998). This tradition goes back to Grunig and Hunt's (1984) mention about applying the same principle of MBO (management by objective) to public relations evaluation. The goal-attainment approach is the most focused approach of organization effectiveness in the Excellence Study (Dozier & Ehling, 1992; J. Grunig, et. al., 1992).

Researchers have defined effective public relations as achieving its goal through public relations activities (Fairchild, 1997; Hon, 1997b; Pritchitt, 1994).

In this regard, measuring the economic value of public relations can start with setting up appropriate and measurable goals. By doing this, this study can avoid the arbitrary assignment of dollar values (Ehling, 1992; Grunig, 1998) and determines causal relationships and coefficients among costs, the public relations goal, and the organizational goal.

The Primary and Secondary Goal: The Intervening Variable

Donohew and Palmgreen (1981) argued that mediating variables can elaborate upon theory-building processes and increase their explanatory power. In this regard, using the public relations goal as a mediating variable is more reasonable than the direct investigation of public relations expense-returns function.

> One common way in which theories are elaborated to increase their explanatory power is through the addition of “intervening” concepts. To illustrate in an abstract sense, we might insert concept Y between concepts X and Z to help explain why X and Z should be related. Then, instead of the theoretical proposition (X → Z), we have (X → Y → Z). (p. 33)

In statistics, this kind of process is referred to as a chain relations model (Agresti & Finlay, 1997). This chain of causation often can explain reality better than the single direct relation. This is a similar argument to Donohew and Palmgree’s explanation of the theory (1981).

Kirchohhoff (1977) consistently argued that examining multiple goals is the most efficient way for measuring organization effectiveness. He also emphasized the importance of using primary and secondary goals in measuring organizational effectiveness:

> Each ultimate criterion still needs to be expressed in relation to the others since effectiveness is a multi-goal function. To accomplish this, each ultimate criterion can be used as the regressand in a multiple regression equation wherein the regressors are a set of penultimate criteria, including the criteria that will be "ultimate" in other regression equations. Thus a series of equations will be generated, each equation expressing the multivariate relationship of one ultimate criterion to all other criteria…Overly simplistic single variable models are inadequate expressions of the real-world, multigoal existence of organizations. Multiple equation models of effectiveness expressing various derived goals of the organization represent the future of policy research. (pp. 353-354)

Following Kirchhoff (1977), the organizational goal is the ultimate goal and the public relations goal is the penultimate goal. The ultimate and penultimate goals could be called the primary and secondary goals in this study.

Public relations goals should be related to organizational goals in the model setup (Heitpas, 1984; Webster, 1990). To measure organizational goals, public relations goals should be secondary goals. Thus, public relations goals such as reputation and relationship can be secondary goals to achieve a primary goal, the organization's goal such as profits and revenues. In other words, dependent variables in public relations activities automatically become independent variables for achieving the organizational goal.

Public Relations Expense and the Public Relations Goal

Industry research focused on public relations expense is becoming more prevalent. Besides the annual Thomas L. Harris/Impulse Research Survey, which collects public relations expense data ("Survey shows," 1997), there are other industry surveys: 'The AMA/Wayman Group Marketing Industry Report' (Miller, 1996), Nichol & Co.'s 'Importance of PR at Fortune 500 companies' study ("Proof positive," 1998), and The Conference Board's 'Managing Corporate Communications in a Competitive Climate' study (Troy, 1993) and 'Corporate Contributions' study (Tillman, 1996).

A hike in public relations budgets has become an industry trend over the last five years ("Survey shows," 1997; "Proof positive," 1998; Troy, 1993). In the 1997 Thomas L. Harris/Impulse Research Survey, in-house and agency budgets increased by 30 percent in 1996. The survey indicated that internal expense rose 10 percent and agency budget hiked 44 percent. Public relations' total average budget was $2,355,000 (total revenue $3.5 billion) among 2,042 companies that participated in the survey. This result is in line with the outcomes over the last five years in the same survey. Furthermore, just for Fortune 500 companies, Nichol and Co's survey ("Proof positive," 1998) showed that those companies had a hike in their public relations budgets over 1997. The moderate increase of public relations expense in the 1992-1995 period was anticipated in The Conference Board's 'Corporate Communications' survey (Troy, 1993). Thus, this surprising increase rate is accepted as a renewed commitment and responsibility to the public relations industry ("Proof positve," 1998). This trend is expected to continue as long as the economy remains strong ("Ad spending," 1996).

As public relations budgets increase, CEOs' demands of accountability for public relations expense become more tenacious than ever before. However, all of the surveys mentioned did not go further to relate the increase of the public relations budgets to their impact on public relations goals and accountability to the company's bottom-line. All of the surveys reported were the raw data only following industry, financial, and employee size.

Showing the relationship between public relations expense and public relations goals becomes a critical task in the public relations industry. Thus, the first task of this study is to hypothesize and test the relationship between public relations expense and the public relations goal.

The industry has focused on measuring publicity exposure. Ketchum, Delahaye, Newlin, CARMA and other firms provide publicity tracking services with their own databases (Hauss, 1993). Placements and exposure through tracking research have been used often as the pubic relations goal (Grunig & Hunt, 1984; Ehling & Dozier, 1992). However, mere exposure and placements cannot guarantee behavior changes or organization goals such as increased sales or profit maximization (Ehling & Dozier, 1992). This kind of emphasis on frequency and reach will turn public relations into the subfunction of marketing activities (Ehling, 1992) and does not respond to unique public relations problems.

In the overall public relations' contribution, Ehling and Dozier (1992) argued for the use of subgoals. However, these suggested subgoals are closer to goals of persuasion, which means an emphasis on changing publics themselves:

> One, of course, can identify several subgoals, treated as linkage points in the long chain running from potential exposure to the manifestation of overt behavior or action. Such subgoals might include potential exposure, actual exposure, awareness, comprehension, attitude change, acceptance, retention and overt behavior. (p. 265)

Usually attitude changes and other mental state changes were measured to show the perception the public had about the organization. But these mental states were not welcomed as public relations goals among public relations academicians because they cannot bring expected behavior changes as described in the domino theory (Grunig & Hunt, 1984; Dozier & Ehling, 1992) and limited-effects paradigm[7] in mass communication effects theories (Defleur & Ball-Rokeach, 1989; Katz, 1988; Severin & Tankard, 1988).

In Hon's (1997a) study, attributes of public relations effectiveness were defined as risk management, building relationships, media relations, earning respect, increasing understanding, goal achievement, affecting legislation, and disseminating the right messages. Also this research inferred building relationships and earning respect as two major dependent variables for public relations effectiveness. In fact, other effectiveness variables can be achieved through building relationships and earning respect. Relationships can include the media, government, and other stakeholders. Also the attributes for obtaining a good relationship are increasing understanding, disseminating right messages, and issue management.

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[7] The limited effects paradigm represents the minimal effect of mass communication. This paradigm negates the direct and powerful effect of mass communication and is more focused on the communication impact of personal communication.

In another study conducted by Hon (1997b), CEOs believed that the ultimate goal in public relations is "communicating the image of the organization." This outcome is relevant to establishing the public relations goal in this research. The image of the organization could be interpreted as the reputation because the image did not mean only the symbolic identity such as company and brand names.

Schramm (1988) defined the objectives of public relations as embracing levels of communication activities. He thought all intentional communication activities would build the image of the organization in the long-term:

> [The objectives of public relations are] preparing news releases, writing speeches, issuing publications, planning special events of public interest, answering correspondence, maintaining friendly relations with the media, arranging publicity for persons or products-in fact, anything that has to do with the image presented by the employing organization to persons whose opinions it cares about. (p. 309)

Grunig (1993) suggests three dependent variables of public relations effectiveness: reputation from the public, relationship with stakeholders, and satisfaction of employees. Because of negative connotations related to public relations, he replaced 'image' with 'symbolic relationship.' He used symbolic relationships as the object of micro-level public relations and behavioral relationships as the object of macro-level public relations. Thus reputation means 'substantive behavioral relationships,' not 'superficial symbolic activities.'

Corporate image represents the summed perception about an organization (Marken, 1990). Public relations academicians do not use the word 'image' because of its manipulative meaning (Grunig, 1993; Cutlip, 1991); instead, they use 'reputation' as a better way of defining corporate image because reputation represents behavioral relationships with publics (Grunig, 1993). Thus, as one fundamental public relations goal, reputation is a key dependent variable of public relations activities (Hon, 1997b; O'Neill, 1984).

J. Grunig and L. Grunig (1998b) argued that the symbolic meaning of reputation can be utilized only in a marketing and advertising perspective since public relations goals, reputation and relationships have interchangeable meanings. Public relations cannot be excellent without considering strategic management with strategic constituencies. This relational reputation only can be achieved by two-way symmetrical communication with relevant publics, not just the perception of consumers as defined in the marketing field.

> The value of a brand lies not just in the recognition of a name but in the trust people have in a company and its products. Thus, we believe the most effective way to manage a reputation or brand image is by using two-way symmetrical communication to help manage the organizational behaviors that produce a bad reputation and to develop a trusting relationship with both consumer markets and publics. (J. Grunig & L. Grunig, 1998b, p. 24)

Public relations efforts strive to improve the organization's reputation. Thus the first hypothesis is related to the relationship between public relations expense[8] and the company's reputation:

Hypothesis 1) Increasing public relations expense will have a positive relationship on the company's reputation.

The Public Relations and the Organizational Goal

L. Grunig, J. Grunig, and Ehling (1992) argued communication objectives should be connected to broader organizational goals. Other researchers and practitioners also agreed with the importance of that task (Bissland, 1990; Hon, 1997b; Newlin, 1991; Webster, 1990). This exploratory study also is in line with the assumption that public relations goals should be connected to organizational goals to measure the contribution of public relations to the organization.

Organizational contribution can be defined as achieving organizational goals (Grunig & Hunt, 1984). Campbell (1977) defined 30 organizational effectiveness measures such as productivity, efficiency, profit, quality, control of the environment, adaptation/flexibility to the environment, revenue growth, job satisfaction, stability, and information management and communication. In the context of economic value, profitability and revenue are the most common indicators of organizational goals. In the multiple-goal theory, which suggested various goals in each stage of organizational efforts (Seashore & Yuchman,

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[8] Public relations expense data are collected through a self-administered questionnaire. Several methodological remedies for increasing the validity and reliability of data are described in the methodology section. In this study, other dollar-value variables such as inflation and price change are not considered for simplicity of testing.

1967), profitability and revenue were listed as the ultimate goals in the organization.

Grunig and Hunt (1984) differentiated public relations goals and organizational effectiveness. In their book, organizational effectiveness means the achievement of organizational goals. Public relations can contribute to organizational effectiveness by achieving its goal. Also in Hon's (1997b) study, the link between public relations goals and organization goals was contemplated:

> Most interviewees [who are public relations practitioners and CEOs] stated that the connection between public relations and organizational goal achievement is very clear to them and, for the most part, others in the organization. For example, a vice president of membership for a trade association said that "everything we do" relates to the organizational mission. (p. 23)

There also are other studies that tried to turn invisible values into monetary indicators. Preston (1981) advocated the indirect effects of socially responsible behavior on economic performance. L. Grunig, J. Grunig, and Ehling (1992) also insisted that ethical behavior helps corporations enhance the bottom line and secure market power by increasing employee satisfaction and improving relationships with publics. L. Grunig, et. al. (1992) summarized the value of public relations:

> We cannot say that excellent public relations alone can save an organization the cost of activism, regulation, or litigation, that it makes employees more productive, or that it brings in resources from satisfied customers, doners, stockholders, or legislators. But good relationships do contribute to these bottom-line behaviors, and by looking at their value to an organization we believe it is possible to estimate the monetary value of public relations to an organization. (p. 86)

J. Grunig (1998) finally concluded the value of public relations has potential effects on organizational effectiveness after reviewing the research of organizational sociologists and scholars of business management. “Despite their differences, the work of organizational scholars leads to the conclusion that public relations has the potential to help make organizations effective” (p. 4).

Also, from the follow-up interviews conducted for the Excellence Study, the economic value of public relations to the organization has been reported as the form of returns on investment (Lindeborg, 1994).

> The chief executives surveyed in the study have been able to estimate the value of public relations to their organizations. They said the return on investment of their communication function was 184%, or nearly two dollars for every dollar spent. This estimate should be pleasant news to the top communicators in these organizations, who predicted the chief executives would rate communication only a 127% return on investment. (p. 11)

In the pilot study of 92 companies in 11 industry categories, Kim (1997) found a positive relationship between the company’s reputation and returns across all industries. Using economic linear and non-linear models, the considerable amount of the variance in revenues could be explained by reputation. The most important indication of this study is the exhibition of a positive relationship between reputation and revenue.

Assigning an economic value to the company’s reputation can be an initial step for developing more sophisticated and scientific methodologies of measuring contributions of public relations. However, this study is different from the cost-benefit analysis, which directly assigns the monetary value of public relations goals. Assigning the monetary value, as Grunig (1998) indicated, wholly depends on intersubjective reliability and is less than objective. However, coefficients from the economic model testing can represent the weighted relationship between the company's reputation (the public relations goal) and returns (the organizational goal) in a specific category. These coefficients can be used in the next step to assign the monetary value of goal achievement. Thus, this study can be called an initial attempt to materialize public relations values in an empirical way.

From the previous discussions, the company's revenues are chosen as the organizational goal. The public relations goal (reputation) should prove its positive impact on the organization goal. Thus, the second hypothesis lies in the relationship between the company's reputation and revenues.

Hypothesis 2) Improving the reputation of the company will have a positive relationship on the company's revenues.

Economic Models in Other Managerial Fields

Due to the exploratory character of this study in public relations, modeling ideas also were sought from other scholarly fields. The economic model has been utilized to detect the impact of promotional activities on the company's bottom line in a broad sense. In the 1970s, Profit Impact of Market Strategy (PIMS) was conducted by Marketing Science Institute and Harvard Business School with the multiple regression model (Schoeffler, Buzzell, and Heany, 1974). The main objective was to provide top management with information on the profit impact of different kinds of business operations and optimal strategies. This project found 37 factors as the components of profit impact. These are return on investment (ROI), market share, total marketing expenditures, product (service) quality, R&D expenditures, investment intensity, corporate diversity, and so on. This project explains 80 percent of variance in the profit impact by these factors.

Measuring the economic impact of advertising, Stone & Duff (1993) set up the theoretical impact model as the following:

$$\text{Sales} = f\,(\text{Marketing, Competition, Exogenous factors})$$

They thought that sales were a function of marketing efforts, competition, and other exogenous factors. Dittus and Kopp (1990) argued about advertising accountability problems in that reaching people did not guarantee advertising effectiveness and behavioral change. They insisted on the utilization of a regression model with the simulation of effects.

Zagorsky (1993) proposed an economic impact model of help-wanted advertising. This study clarified the impact of advertising cost using nonlinear regression models. Along the same line, Farris and Reibstein (1979) investigated the relationship among prices, advertising expenditures, and return on investment. Using the data used in the PIMS program, they postulated economic models as follows:

$$RP = 92.86 + 2.82\ RA$$
$$ROI = 20.54 - 2.18\ PACI + .28\ MS - 4.42\ PLC + .007\ MS\Delta + .03\ PQ$$

Where RP is the relative price level, RA is the relative advertising level, ROI is the predicted return on investment, PACI is the price-advertising consistency index, MS is the market share, PLC is the stage in the product life cycle, MSΔ is the sum of the market share changes, and PQ is the product quality.

From the outcomes of coefficients, they concluded that advertising expenditures affected prices, and companies with high prices and high advertising expenditures (low PACI index) had more profits than companies with low prices and high advertising expenditures (high PACI index). Also, the increase in the market share and product quality had a positive effect on profits. Their economic model suggests a blue print for the relationship among prices, advertising, and profits. Balasubramanian and Kumar (1990) also specified the remarkable consistency in the relationship between marketing communication intensity and market growth.

Simon and Sullivan (1993) argued in their brand equity measurement that advertising can affect brand equity and profitability. Also, they insisted on the carry-over and cumulative effects of advertising. From their outcomes, they concluded that the advertising share compared to competitors affects market share, brand equity, and profitability.

Related to promotional elasticities, much research has been conducted. Ramaswany, Desarbo, Reibstein, and Robinson (1993) used the PIMS data to analyze the marketing-mix elasticity on consumer demand. They found that the scope of business affected the marketing-mix elasticities on consumer demand. Bolton (1989) also analyzed the relationship between marketing characteristics and promotional-price elasticities with a regression model. The outcomes showed that market characteristics such as brand market share tended to have impact on the elasticities. Narasimhan, Neslin, and Sen (1996) found that product category characteristics affected promotional elasticities. The categorization of industry was a prerequisite for the economic analysis.

Belch and Belch (1995) described the factors influencing sales in their advertising textbook: advertising and promotion, competition, technology, product quality, price, and distribution. Promotion and competition can be compared with communication activities and market share.

Examining the economic impact of generic promotion of beef, Ward and Lambert (1993), using a nonlinear econometric model, clarified the effect of promotion expenditure to the return to the industry. Generic promotion means non-product promotion. They concluded that $1 investment in generic promotion produced a $5 return to the industry.

From advertising, promotional elasticity, and market share-profitability research, three points can be applied to a public relations evaluation model. First, promotional marketing activities including advertising have shown some effects for the benefit of the company in the evaluation models. Second, the size of company or market share affects the impact of promotional activities. Third, the economic impact always varies following industry categories. Thus, economic impact should be analyzed within the same potential groups and environments.

Market Share and Returns[9]

Balasubramanian and Kumar (1990) established a model for estimating the relationship between the marketing communication intensity (MCI) and market share. Market share indicated a positive effect in the consumer and industrial market, but showed a negative effect in the service market. Farris and Buzzell (1979) hypothesized and supported that businesses with large market shares would lower advertising and promotion to sales ratio.

In their meta-analysis of 276 research findings about the market share-profitability relationship, Szymansky, Bharadwaj, & Varadarajan (1993) concluded that market share had a positive effect on business profitability. However, they emphasized that the relationship could be changed by model specification errors, sample characteristics, and measurement characteristics.

Most studies about the relationship between market share and profitability showed positive relationships (Farris, Parry, & Webster, 1989; Farris & Reibstein, 1979).

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[9] Market share is needed for the identification of the model. Because there are two dependent variables, the model cannot be identified with one independent variable. Without identification, estimating the model is impossible. Market share has been mostly used in measuring effects on the company's returns in other studies (Hauss, 1993). For keeping the simplicity of the model, other variables were not considered. Also the purpose of this study lies in the causal relationship between public relations expense and returns, not in how much the study can explain the company's returns. The literature review for market share and returns is also in the later section, "economic models in other managerial fields."

Besides market share as a most important exogenous (independent) variable, other variables also can be considered. Age of brand, order of entry, current and past advertising share, and competitors' marketing activities have been discussed as other factors (Simon & Sullivan, 1993). However, market share has sufficient explanatory power for explaining the competitive market situation (Stone & Duff, 1993; Farris & Reibstein, 1979). For the simplicity of the model, only market share is included for model testing. A hypothesis related to market share is established:

(Hypothesis 3) Market share will have a positive relationship on the company's revenues.

Specification of Models and Research Questions

Specifying the Model

Previously discussed models were carried out mostly using a single equation within a linear or nonlinear model. But, it is difficult to explain a complex reality with a single equation. In this context, the model that can handle two-stage relationships (in this study, public relations expense - reputation - returns) fits the purpose of this study.

The structural equation model[10] has been broadly utilized in marketing research in the case of more than two dependent variables (the public relations goal and the organizational goal) as suggested in this study (Bagozzi, 1977; Finn, 1988; Joreskog & Sorbom, 1982; Mackenzie, 1986; Rinehart & Page, 1992). Two goals (two dependent variables) should be specified in the model to investigate the economic value of public relations. Apparently the structural equation model seems to be the optimal option here because two equations in the same system are needed to solve the model containing two dependent variables.

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[10] "Sometimes structural equation models are called LISREL models, analysis of covariance structures, or analysis of moment structure. Regardless of the name or notation, the terms refer to general models that include confirmatory factor analysis, classical simultaneous models, path analysis, multiple regression, ANOVA, and other common techniques as special cases" (Hoyle, 1995, xix). However, in fact, all principles are the same with the regression model except some cases. Thus, methodological complexity will not be discussed in detail in this study because the structural equation model can be basically interpreted as one of many other regression measures.

Crosby, Evans, and Cowles (1990) investigated the impact of relationship quality in services on selling using confirmatory factor analysis and a structural equation model. They found that the future sales depend on relationships with consumers. They used three endogenous variables[11] such as relationship quality, sales effectiveness, and anticipation of future interaction. Similarity, service domain expertise, and relational selling behavior were used as exogenous variables. This approach is very similar with that of this study. The model consists of two-stage relationships.

> The exogenous variables in the model can be classified as pertaining to either salesperson attributes (e.g., expertise and similarity) or relational selling behaviors (e.g., contact intensity, mutual disclosure, cooperative intentions). The endogeous variable of relationship quality is conceived as a two-dimensional construct consisting of customer satisfaction and trust in the salesperson. Finally, observe that sales effectiveness (e.g., account

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[11] "In the context of the simultaneous-equation models, the jointly dependent variables are called endogenous variables and the variables that are truly nonstochastic or can be so regarded are called the exogenous, or predetermined, variables" (Gujarati, 1995, p. 635). The reason for using different notations is that sometimes dependent variables become independent variable in the structural equation model. In this study, the company's reputation is a dependent variable against public relations expenditures, but an independent variable against the company's return. Thus it is better to call the company's reputation an endogenous variable to avoid confusion.

> penetration, cross selling) and anticipation of future interaction (an essential determinant of relationship commitment) are represented as outcome variates. (Crosby et al., 1990, pp. 69-70)

These researchers' approach to measure the relationship between service quality and sales shows the two-stage approach: (1) service to relationship quality, and (2) relationship quality to sales effectiveness. This approach can clarify the causal relationship in a more reasonable way because the goal of service is not selling itself, but increasing relationship quality with consumers. This model is structurally identical with the proposed model in this study.

Posdakoff and Mackenzie (1994) measured the effect of organizational citizenship behaviors (OCBs) on manager's evaluation of performance using the structural equation model. The purpose of this study was to detect the impact of OCBs on sales performance and to compare this result with actual managerial evaluations. They used the structural equation model and confirmatory factor analysis with agent's helping, agent civil virtue, agent's sportsmanship (this means a fair competition), and overall evaluation of agent as latent variables. They tested causal relationships between latent variables after the confirmatory factor analysis. The results indicate that OCBs make an important contribution to selling performance.

This kind of model that tests more than two endogenous variables can be found easily in attitude-behavior models (Chow, Rose, and Clarke, 1992; Mackenzie, 1986; Ohanian, 1991; Ryan, 1982). When consumers' purchase intention was investigated, the role of attitude was emphasized as a guide of behavior. Thus, other beliefs or the evaluation of beliefs become exogenous variables and attitude and behavior become the first and second endogenous variable. The structural equation models were used for testing without exception in these cases.

Kim (1998) tested the identically structured advertising evaluation model with this study. The purpose of the advertising study was to elaborate upon the advertising evaluation process by integrating psychological effectiveness and economic efficiency. The model, which includes advertising expenditure (exogenous variable), brand equity (the advertising goal, endogenous variable), and company returns (the organization goal, endogenous variable), proposed causal relationships among the variables. The structural equation model was utilized with existing data for testing. Generally, the outcomes of structural equation models were consistent with the theory. The sample data fit with the proposed model, which indicated improvement of the methodology in advertising evaluation. This model has the exactly same structure as this study and indicated the feasibility and validity of model testing.

In the context of current methodological research trends (Bentler & Chou, 1988; Bollen & Long, 1993; Hoyle, 1995; Long, 1983a; Long, 1983b), the structural equation model includes the simultaneous equation and the confirmatory factor analysis. In spite of the cryptic impression of structural equation model, its principle is not different from the regression model. As Hoyle defined, “Structural equation modeling (SEM) is a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables" (1995, p.1). From his explanation, the structural equation model includes all modeling tests and consists of model specification, estimation, evaluation of fit, model modification, and interpretation. Long (1983a, 1983b) divided SEM into the measurement model (the confirmatory factor analysis) between indicators and concepts, and structural equation models between concepts. He named the integrated form of measurement models and structural models as covariance structure models. Including all of these concepts and definitions, the structural equation model can be defined as the causal model that can explain the complex relationships irrespective of observed or unobserved variables in the model. Bollen and Long (1993) argued:

> Much of their attractiveness stems from their generality. Like econometric methods, structural equation models allow consideration of simultaneous equations with many endogenous variables. Unlike most econometric methods, structural equation models allow measurement error in the exogenous and endogenous variables. As with factor analysis developed in psychometrics and related procedures in sociometrics, structural equation models permit multiple indicators of latent constructs and estimation of reliability and validity. (p. 1)

The merit of the structural equation model lies in its capability of measuring the model that contains more than two dependent variables (endogenous variables could be a more accurate expression) and their simultaneous causal relationship (both variables can affect each other in reality). But one difference from Econometrics is its use of unobserved variables even though all principles were developed from Econometrics. In Econometrics, all data should be observed ones and reliability and validity of concepts do not reside in the model (but SEM includes measurement errors in the model). In conclusion, the structural equation model fits into the characteristics of this study; also is a better model than the simple regression model.

Public Relations Expense as an Observed Variable

Based on the previous discussion, a full evaluation model at the organizational level can be described as Figure 1. Thus, a theoretical model is composed of two functions as follows:

$$\text{Public relations goal} = f\,(\text{public relations expense, explanatory factors}) \quad (1)$$

$$\text{Organization goal} = f\,(\text{the goal of public relations, explanatory factors}) \quad (2)$$

In this study, market share was used as an explanatory variable following the economic impact model of advertising (Stone & Duff, 1993; Farris & Reibstein, 1979). Market share is the most common variable in economic impact research (Szymanski, Bharadwaj, & Varadarajan, 1993). For the simplicity of the model, other possible competitive variables such as price and product quality are assumed to be included in the market-share measure.

The full model for measuring public relations efficiency has two steps: measuring the economic impact of public relations goal (reputation) on revenues and the impact of public relations expense on public relations goal (reputation).

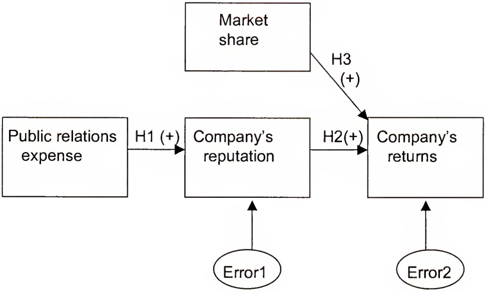

Figure 1.
The two-stage model of measuring the economic value of public relations in the organizational level

Public Relations Expense as a Latent Variable

Considering different budget allocations and inconsistent categorizations of public relations expense, the level of public relations activities should be compared by other reasonable indicators. Besides the public relations expense question, other specific indicators could be measured by asking perceptions about public relations budgets of nine areas: media relations/press relations, employee communications, local community relations, government affairs at the local and federal levels, environmental and safety affairs, investor relations including stockholders and Wall Street communications, contributions, corporate advertising, and others. By using a confirmatory factor analysis, the level of public relations activities was measured from those indicators. The model using a latent variable is in Figure 2.

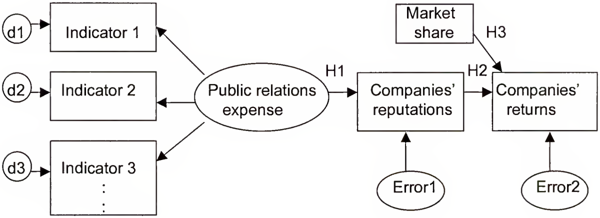

Figure 2.
The evaluation model at the organizational level using
public relations expense data as a latent variable

Note. 1. ▭ Observed variable ⬭ Unobserved variable

2. d1, d2, d3: Unique factors of observed variables. These are similar with error terms in the regression model.
3. The number of indicators depends on the number of applicable items from the total nine items.

Based on this discussion, research questions are established to elaborate the uses of the proposed two-stage model and to answer other questions:

R. Q. 1) Does the two-stage model of public relations expense-public relations goal-organizational goal explain the economic impact of public relations better than the direct model between public relations expense and returns?

R. Q. 2) Does public relations expense indicate a consistent effect on the public relations goal and organizational goal both from the observed data and the latent data to confirm its effect?

R. Q. 3) How do public relations expense and reputation contribute to the organization's bottom-line directly and indirectly? How much do they affect the bottom line?

R. Q. 4) What are the differences of model coefficients among different industry categories? Among different reputation levels? Among different revenue levels?

R. Q. 5) Do other analyses support the outcome of the structural equation model? Do analyses for each equation show any change in increasing rate?

CHAPTER 3
METHODOLOGY

The Research Overview

This study used both secondary analysis and a mail survey. The advantage of secondary analysis is resource savings and accessibility. And, by matching the source and range of data, this study can avoid the problems of sample incomparability between secondary data and primary data. The following steps are an overview of data collection:

1) The reputation data were collected from existing published survey data.
2) Data for all other economic variables such as revenues, market share and other possible explanatory variables were collected from existing databases.
3) Public relations expense data were gathered from a survey of the industry.

The Research Population

Fortune 500 corporations[12] were selected as the population because *Fortune* 500 corporations represent well-performing American industry and have systematic annual databases for each company, which can be obtained through systematic annual databases for each company, which can be obtained through the *Fortune* magazine database. Also this category had consistent budgets for public relations activities in other studies ("Proof positive," 1998; Troy, 1993; also refer to the Thomas L. Harris/Impulse Research Annual PR Expense Survey). In 1996, *Fortune* 500 corporations were represented by many industry categories. Thus, this study can be characterized as a purposive sample with limited generalization to all American industry.

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[12] *Fortune* 500 companies were chosen for samples because they are recognized as the most successful companies in the business community and spending considerable amounts of money for public relations activities (Wilson, 1994). This study needed to choose companies that practice consistent public relations activities to clarify the impact of public relations. Also they have been frequently studied and equipped with accumulated databases (PR News, 1998, March 30; Troy, 1993). Thus they were chosen because they are the most accessible and feasible category. However this does not mean that companies outside Fortune 500 are not conducting effective public relations. *Fortune* 500 in this study denotes *Fortune* 500 industrial and *Fortune* 500 service companies (Troy, 1993).

Survey Instrument

The survey was sent to obtain public relations expense data from all *Fortune 500* Corporations that participated in the annual *Fortune*'s corporate reputation survey. The survey was conducted through the mail using a self-administered questionnaire. In spite of the limitation of the self-administered survey, this is the only way to collect public relations expense data.[13] Other studies related to public relations expense data such as Thomas L. Harris/Impulse Research Public Relations Agency Survey (1993-1997), The Survey of Managing Corporate Communications in a Competitive Climate (Troy, 1993), and The Survey of Corporate Contributions (Tillman, 1996), all used self-administered questionnaires.

The survey consisted of two parts. First, public relations expense data were gathered. Extreme care was taken to make the definitions of public relations expenditures universally acceptable. The primary definition of public relations activities will be the one used in the *O'Dwyer's Directory of Corporate Communications* (1998) and the *Survey of Managing Corporate communications in a Competitive Climate* (Troy, 1993). In Troy's survey, the management of internal and external communications in firms was the focus. Company samples were drawn from the 1991 *Fortune* 500 manufacturers and *Fortune* 500 service firms. The response rate was 22.4 percent. This study grouped 12 tasks as communication activities for budget allocations: media/press relations, speechwriting, employee communications, corporate advertising, community relations, creative services, video/AV/teleconferencing, contributions, issue analysis, stockholder relations, investor relations, and government relations.

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[13] Using a self-administered questionnaire could be a limitation of this study. However, this method seems to be an only choice under the condition of no databases. Other previous studies have used this method to collect the public relations expense data (Thomas L. Harris and Impulse Research, 1997; Troy, 1993; PR News. 1998, March 30). Compared to the subjective assignment of the bottom-line impact by CEOs in the Excellence Study (1998), this method is much more objective.

In *O'Dwyer's Directory of Corporate Communications*, expenditures are defined as all dollars spent for conducting these activities:

> A well-established PR/communications department at a major company has responsibility for press relations, employee communications, local community relations, government affairs at the local and federal levels, environmental and safety affairs, financial relations including stockholder and Wall Street communications, corporate identity programs, contributions, corporate training programs and may also handle exhibits, conventions and trade shows. It may produce a wide range of written and audio-visual materials such as annual and quarterly reports, sales brochures and video cassettes for use at distant plant locations. And, depending on its mandate from management, it may spend much of its time counseling management on how to best fulfill its responsibilities to the public and avoid confrontations in the media. (p. A5)

By integrating two definitions of public relations expense, this study defined public relations expense as nine categories: 1) media/press relations, 2) employee communications, 3) local community relations, 4) government affairs at the local and federal levels, 5) environmental and safety affairs, 6) investor relations including stockholder and Wall Street communications, 7) contributions, 8) corporate advertising, 9) other tasks: producing written and audio-visual materials such as speechwriting, annual and quarterly reports, sales brochures, video, and other materials for teleconferences; exhibits, conventions and trade shows; creative services and corporate identity; counseling management, and issue analysis.

To save practitioners' time when completing the questionnaire and to reassure practitioners concerned about divulging proprietary information, increasing or decreasing rates of public relations expenditure were measured. Questions regarding public relations activity indicators also were asked. Considering different budget allocations and inconsistent categorization of public relations activities, the level of public relations activities should be compared by other reasonable indicators. These issues were so important that they will be addressed in greater detail in a later section.

Some socio-demographic questions and budget information was included at the end of the questionnaire.

Operationalization and Data Collection

First, reputation in this paper does not imply symbolic image or manipulation of the company image in the asymmetrical world view. Reputation as the goal of public relations represents the relational image between the organization and publics. Relationships with publics include strategic constituencies (J. Grunig et al., 1992; J. Grunig & L. Grunig, 1992) such as consumer relations, employee relations, investor relations, and community relations. This study accepts the *Fortune*'s approach that utilized an instrument measuring relational image and represented the symmetrical world view. In a future study, devising an organizational database for the level of reputation or relationship is an essential requisite for the development of public relations evaluation. However, in this stage, it is somewhat fortunate to utilize existing legitimate and consistent time-series data that represent the company's reputation in the symmetrical world view.

Thus, reputation data were collected from the results of *Fortune*'s annual corporate reputation survey (Stuart & Harrington, 1998; Robinson, 1997; Fisher, 1996). Reputation is measured by eight key attributes: quality of management, quality of products or services, ability to attract, develop, and keep talented people, value as a long-term investment, use of corporate visible and invisible assets, financial soundness, innovativeness in corporate culture, and community and environmental responsibility (See Belch & Belch, "Introduction to advertising and promotion: An integrated marketing communication perspective," 1995, pp. 542 for eight key attributes of corporate reputation). In 1998, the survey was conducted with 12,600 respondents, who included senior executives internal and external to the companies as well as business analysts. Reputation data also were computed into increasing and decreasing rates from previous scores.

Second, other economic variable data such as revenues, market share, and other possible explanatory variable data were collected from existing databases. For measuring contributions to the organization, there are two options: profitability and revenue. Revenue was chosen for measuring the direct impact of reputation following Stone and Duffy (1993). For profitability, more exogenous variables are needed for an accurate analysis. For the revenue data, increasing rates compared to the previous year's revenue were collected. Revenue data collected from *Fortune's* (1998, 1997, 1996*)* revenue change (%) item will be used as a final dependent variable in the model.

As an explanatory variable, market share was chosen. It is impossible to conceptualize all of the explanatory variables. Also, including all possible explanatory variables is not recommended at all in the modeling (Farris & Buzzell, 1979). In the promotional elasticity modeling, market share is the most common explanatory variable. This study used Farris and Buzzell's operational definition of market share: "market share is the ratio of each business unit's dollar sales to the total size of its served market (p. 115)." Szymanski, Bharadwaj, and Varadarajan (1993) divided the definition of market share into absolute market share (ratio compared to total sales in the served market) and relative market share (the ratio compared to the largest several firms). This research is the integration of both methods because the average number of the one category was more than nine. Total size and market shares were calculated from *Fortune* (1998, 1997, 1996).

Third, public relations expense data were collected from the mail survey. Mailing addresses of public relations executives and managers were obtained from *O'Dwyer's Directory of Corporate Communications* (1998) and the *National Directory of Corporate Public Affairs* (1997, Colombia Books). The annual Thomas L. Harris/Impulse Public Relations Agency Survey for collecting combined in-house and agency budgets of 4,000 companies also used those clients listed in the *O'Dwyers Directory of Corporate Communications*. Four weeks after sending out the first survey, the follow-up letter and a second survey were sent. Finally, four weeks after sending out the second survey, a follow-up electronic survey was conducted by e-mail to increase the response rate. The e-mail addresses were collected from three sources: *1998/1999 Public Relations Tactics/The Blue Book of Public Relations Practitioners, 1998 Authur W. Page Society Membership Directory,* and the Internet homepage of each company.

Specific Measures for Collecting Public Relations Expense

The primary concern of this study was how to obtain public relations expense data from companies because this information could be proprietary. To secure the response rate of public relations expense data (previous research showed that 25 percent is the expected response rate for this type of an industry survey) and to increase the validity and reliability of this study, four steps were taken.

First, since this was a confidential subject, the questionnaire was designed to reflect whether spending was increasing or decreasing, rather than asking for specific dollar amounts. Using increasing or decreasing rates is a widely-used methodology in economic analysis because this also can normalize different dollar amounts. Public relations executives feel more comfortable with increasing or decreasing rates rather than the exact dollar amount of public relations expense.

Second, the definition of public relations expense was specified up front on the questionnaire. To decrease inconsistency in allocating public relations expense, the questionnaire asked respondents to focus on the activities that appeared in the definition of public relations expense.

Third, besides increasing and decreasing rates of public relations expense, indicators of public relations expense were asked. Public relations expense was handled as unobserved data that could be inferred from several indicators. Those indicators are the strength of financial investment of nine activities that also are used as the items of public relations expense: media/press relations, employee communications, local community relations, government affairs at the local and federal levels, environmental and safety affairs, investor relations including stockholder and Wall Street communications, contributions, corporate advertising, and others. Using confirmatory factor analysis (CFA), public relations expense was estimated as a unobserved variable in the model.

Fourth, the questionnaire was pretested in three steps. In the first step, the questionnaire was distributed to 10 public relations practitioners to check the validity of public relations expense data. Next, to check the possibility of collecting data and to obtain valuable comments from *Fortune* 500 companies, the questionnaire was mailed to 10 retired communication executives. And finally the questionnaire was tested under the same condition as the main survey with 20 public relations executives in companies that are not included in the main survey. These pretests assured the validity and reliability of this study. Following comments from respondents in the pretest, the content of the questionnaire was corrected in some places.

Using Secondary Data, and Validity and Reliability

Even though secondary research is useful in evaluation research, public relations practitioners have underutilized this inexpensive and ready for service methodology (Hon, 1997b). This method tends to be cheaper than any other method (Becker, 1981). The strongest characteristic of secondary analysis is its facilitation of comparative research and time series analysis. International comparisons and things that happened in the past cannot be measured through surveys (Jacob, 1984; Kiecolt & Nathan, 1985). Also secondary analysis can elevate the possibility of exploratory theories and enlarge the horizon of existing theories (Becker, 1981).

However, secondary analysis has several limitations. First, the most serious problem originates from the different approach in primary research (Becker, 1981). The interest of primary research is not the same as that of secondary research. Thus the burden of adjusting the different interests coexists with the expediency of secondary research. Second, the key problem is a validity problem. Concepts in primary research are often not comparable with those used in secondary research. In most cases, secondary analysts cannot control validity (Babbie, 1995). Third, secondary analysts cannot guess flaws and limitations during data collection (Becker, 1981; Jacob, 1984). Fourth, there is also a limitation of external validity (Babbie, 1995; Becker, 1981; Jacob, 1984). In secondary analysis, external validity (generalizability) could be weakened because of the difficulty in getting comparable groups.

Thus, evaluating existing indicators is the most important task to overcome the limitation of validity in secondary analysis. Once existing indicators have been obtained, reliability can be tested together. Recently, confirmatory factor analysis (used usually with the LISREL program, which also is called covariance structure analysis, structural equation model, or analysis of moment structure) is usually adopted to evaluate the validity and reliability of existing indicators (Kiecolt & Nathan, 1985).

> Covariance structure analytic techniques allow a researcher to test models of the relationships between items. The researcher predicts which items will comprise each factor or construct, whether the constructs that were posited will be correlated with each other, and further whether any of the error terms of the items will be correlated (an assumption that is not allowed by exploratory factor analytic techniques). A chi-square test of goodness of fit is used to evaluate how well the posited model reproduces the observed correlations or covariances among the items; the smaller the chi-square, the better fit. That is, the information enables the researcher to make an improved prediction about which variables will make up each construct, whether the constructs will be correlated with each other, and so forth. (Kiecolt & Nathan, 1985, p. 55)

Besides this, the covariance structure analysis provides the opportunity of choosing items using model fits. Problematic items can be removed and only valid and reliable items can be utilized (Kiecolt & Nathan, 1985).

The validity and reliability of reputation data that have seven items can be checked by this confirmatory factor analysis. The items of the annual reputation survey in a chosen year can be checked. If there is somewhat unreliable and theoretically shallow items, the model can be tested without those items to increase validity and reliability. The model fit represents validity of items against observable reputation data (in factor analysis, a factor is a latent variable that is not observed but formed by observed items). Also, using average scores of all items as a criterion variable, relationships between average scores and each item can be estimated to check unusual relationships. The reliability of items can be checked by Cronbach's alpha. Also the confirmatory factor analysis model shows standardized coefficients between reputation and items. Those coefficients represent reliability of items.

As discussed previously, the weakness of secondary analysis lies in using already established instruments of primary research and accepting their conceptualization and operationalization. However, by analyzing the instrument, those problems can be overcome to some extent. Thus, obtaining complete and precise instruments and raw data in primary research is a prerequisite of testing validity and reliability in secondary analysis.

Public relations expense data were collected through the survey. The concept of public relations expenditures from the definition of *O'Dwyer's Directory of Corporate Communications* has face validity because it is accepted in industry and collected annually. Reliability was obtained by being as specific as possible when the definition of public relations expenditure was presented. Clerical error, misunderstanding, and inconsistency were minimized by a specifically structured questionnaire. As the second measure, the validity and reliability of expenditure data were checked by perception indicators of public relations budgets. The same confirmatory factor analysis was utilized. In this second measure, public relations expense was dealt with as a latent variable.

Revenue and market-share data have face validity and reliability because all companies must report the same data (usually called 10-K) to a government agency annually. Thus all companies have the same standards including the same fiscal year when they report their revenues. Those data are broadly accepted in the industry.

Data Tabulation and Analysis

The priority of analyses is the 1997 data. All collected data were used for the analysis. Reliability of reputation data and validity were checked for the 1997 data. However, this study utilized pooled data from 1995 to 1997 for purpose of comparison purposes. In spite of the difficulty of collecting data, analyses based on cross-sectional time-series data can be rigorous. First of all, the variation of public relations data depends on economic and social changes. Data in a specific year are insufficient for establishing the evaluation model. Second, pooled data have a methodological and analytical advantage by increasing the degrees of freedom. Increasing the degrees of freedom can enhance the statistical stability of parameter estimates.

The survey data were analyzed for model testing in two ways. First, for model testing with public relations expense data, data were analyzed using AMOS 3.61 for structural equation model testing.[14] AMOS (Analysis of Moment Structure) 3.61 is the most recent computer software for testing these kinds of models and compatible with the SPSS data tabulation. The parameters were estimated by the maximum likelihood (ML) full information analysis.[15] The ML estimation is the most desirable statistical test for this kind of complex model. The reason for using ML analysis with AMOS is that the proposed model is not a simple multiple-regression model, and it is a possible simultaneous model with two dependent variables. By using the ML analysis, consistent and efficient estimates can be obtained.[16]

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[14] For testing the structural equation model, several computer programs are available in the market. Among them, LISREL, EQS, and AMOS have been generally used. AMOS provides the graphical interface and it makes model testing easier than other models. Recently, LISREL 8.2 has started to provide the graphical interface. However, they have basically same functions. All these practical information and theoretical discussions can be obtained from SEMNET interest group (listserv@ualvm.ua.edu).

[15] Maximum likelihood estimation (ML) has the same property with the least square approach in the large sample. ML is used here because parameters in the structural equation model are highly nonlinear and the iteration method should be used to find parameters. This process is not possible with ordinary least squares. However, all coefficients in the outcome can be interpreted in the same way as in the regression model.

[16] As Bentler and Chou (1988) indicated, identification is the most critical process in estimating the structural equation model. The model in this study is identified by satisfying necessary and sufficient conditions. The discussion of identification can be found in Arbuckle (1997), Bentler & Chou (1988), Bollen & Long (1993), Hoyle (1995), and Long (1983a, 1983b).

The systems approach (the full information maximum likelihood method, three stage least squares) is preferred to the single-equation methods (ordinary least squares, indirect least squares, two-stage least squares) (Gujarati, 1995). This study utilized the systems approach because causal relationships among all variables in the system are more important than increasing explanatory power by increasing the number of independent variables or only proving a single equation in the system. The adequacy of the model can be tested using the model fit index that is not available in the single-equation approach. Also, total effects including direct and indirect effects can be calculated in the systems approach.

Second, for model testing with public relations activity indicators, confirmatory factor analysis was utilized to infer the level of public relations activities from these indicators. The model testing process is the same with the model containing observed expense data. The results were compared with the other model to obtain consistent estimates.

Finally, data were analyzed to establish the evaluation model for each industry category and compared by reputation levels and other categorical variables.

After testing the proposed model, the linear and nonlinear regression models were introduced to compare the coefficients of each single equation: 1) between public relations expense and the company's reputation, and 2) between the company's reputation and returns. Those coefficients and explanatory power will be compared with the outcomes of structural equation models. Those analyses were added to enhance the applicability of this research and confirm the result of the proposed two-stage model. It also was designed to show whether the economic value of public relations could be inferred from each relationship (public relations expense-reputation or reputation-returns) without considering the complete system (public relations expense-reputation-returns).

For research question five only, data were analyzed using TSP 4.3 [This is software for analyzing a regression model for cross sectional and time series data; it is used widely by economists (Hall, 1995)]. The Ordinary Least Square (OLS) method for the linear and the nonlinear regression model was used to establish an adequate model. Transforming the data using the log allows for analysis of nonlinear models by the OLS method.

CHAPTER 4
OUTCOME

Sample Description

The questionnaire was sent to 476 companies that participated in the 1997 annual reputation survey. One hundred sixty five companies responded to the questionnaire after two mail surveys and an electronic survey. Some companies were not reachable because of a merger, acquisition, company name change, or closure. Eight companies supplied incomplete or no information. After dropping those companies, data from 157 companies were analyzed (33 percent response rate). Compared to the response rate of Troy's (1998) the Survey of Managing Corporate Communications in Fortune industrial and service companies (22.4%), and Nichol & Co.'s 'Importance of PR at Fortune 500 companies' study ("Proof positive," 1998) (20%), this rate was satisfactory.

All companies responded were representative of different revenue groups (See 1997 *Fortune* rank in Table 3). Fourteen percent to 29.9 percent of the companies responded were dispersed among all five revenue-rank groups. Sixty four companies were in the service industry (40.8 %) and 93 companies were in the manufacture companies (59.2 %). Also 90 companies had their businesses in the consumer market (57.3 %) and 67 companies were in the industrial market that focuses on producer goods (42.7%).

Table 3.
Sample Description of Participating Companies

Variable		Frequency	Percent Valid
1997 Fortune rank	-100	47	29.9
	101-200	32	20.4
	201-300	23	14.6
	301-400	22	14.0
	400-	33	21.0
Industry category 1	Service	64	40.8
	Manufacture	93	59.2
Industry category 2	Consumer	90	57.3
	Industrial	67	42.7
Public relations budget	Under $25,000	2	1.3
	$25,000-$500,000	6	3.8
	$500,001-$1milion	53	34.0
	$1,000,001-$25milion	68	43.6
	$25,000,001-$50milion	24	15.4
	$50milion-$75milion	2	1.3
	$75milion-$100milion	1	.6
	Missing	1	
PR budget structure	Internal > external	84	53.5
	Internal = external	5	3.2
	Internal < external	68	43.3
Department title	Public Relations	32	20.4
	Corporate Communication	70	44.6
	Public Affairs	21	13.4
	Marketing Communication	7	4.6
	Investor relations	7	4.6
	Others	20	12.7
PR person title in charge	Manager	12	7.7
	Director	46	29.5
	Vice President	72	46.2
	Senior Vice President	26	16.7
	Missing	1	
Total		157	100

Looking at public relations budget, 68 companies (43.6 %) were in the level of '$1 million to $25 million.' 53 companies (34.0 %) were in the level of '$500,001 to $1 million' and 24 companies (15.4 %) pertain to the level of '$25 million to $50 million.' In the budget structure, 84 companies (53.5 %) spend more money for internally operated public relations programs, but 68 companies (43.4 %) spend more budget on public relations programs conducted by external agencies. Most companies are spending a considerable amount of pubic relations budget.

While various titles were used for the department that takes charge of public relations tasks, 70 companies (44.6 %) used 'corporate communication' as their department title. Not many companies used 'public relations' as their department titles (32 companies, 20.4 %). Also, 'Public affairs' (13.4 %), 'marketing communications' (3.4 %), and 'investor relations' (3.4 %) were used.

'Vice president' (46.2 %) and 'director' (29.5 %) were mostly for the person who took charge of public relations tasks. 'Senior Vice President' was also used in 26 companies (16.7%).

Reliability and Validity Check

As planned in the methodology section, two measures for checking the reliability of the secondary reputation data were taken. The original reputation survey used eight items for measuring the company's reputation: quality of management, quality of products or services, ability to attract, develop, and keep talented people, value as a long-term investment, use of corporate visible and invisible assets, financial soundness, innovativeness in corporate culture, and community and environmental responsibility. First, intercorrelations among items were checked. Cronbach's Alpha (Table 4) indicated highly stable reliability of the eight-item scale (α = .9668). Over 70 percent is an acceptable score (Litwin, 1995). Also, the alpha could not be improved by deleting any of the reputation items.

Second, reliability of observed variables can be tested by latent variables using confirmatory factor analysis (CFA). "The reliability is defined as the squared correlation between a latent variable and its observed indicator (Long, 1983, p.72)." From the analysis for obtaining standardized parameters, Squared Multiple Correlations (SMCs) represent the reliability of observed variables. In this research, all eight components were observed variables and the concept of reputation is an unobserved latent variable (See the Model in Figure 3). The numbers beside the rectangles imply SMCs. SMCs showed considerably high scores on all observed reputation items ranging from .55 to .95. These SMC scores mean the explanatory power of the latent variable on the observed variables (See Table 4). Thus, 55 percent to 95 percent of each reputation items were explained by the latent reputation variable. This outcome is consistent with the results of the Cronbach's Alpha test.

The validity of secondary reputation data was supported by the CFA. CFA analysis showcases the validity of the instrument. Coefficients from latent factors to observed indicators represent the level of validity. Also the model fit indexes

Table 4.

Testing Reliability Using Internal Correlations (Cronbach's Alpha) and Squared Multiple Correlations (SMCs) in the Confirmatory Factor Analysis (CFA)

Items	Corrected Item -Total Correlations	Alpha if Item Deleted	SMCs
REP1	.9422	.9578	.946
REP2	.8408	.9645	.681
REP3	.8233	.9648	.693
REP4	.9514	.9573	.949
REP5	.9086	.9608	.900
REP6	.9711	.9565	.949
REP7	.6005	.9755	.554
REP8	.9446	.9578	.914

Alpha = .9667 Standardized alpha = .9668

Note. SMCs = Squared Multiple Correlations.

REP1 = quality of management, REP2 = quality of products or services provided, REP3 = innovativeness in corporate culture, REP4 = value as a long-term investment, REP5 = soundness of financial position, REP6 = ability to attract, develop, and keep talented people, REP7 = Community and environment responsibility, REP8 = wise use of corporate visible and invisible assets.

Table 5.
Sample Correlations of Eight Reputation Components and Revenue Data

	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Reputation
Rep1	1.00								
Rep2	0.809	1.00							
Rep3	0.810	0.810	1.00						
Rep4	0.947	0.773	0.790	1.00					
Rep5	0.880	0.745	0.714	0.931	1.00				
Rep6	0.945	0.838	0.839	0.949	0.918	1.00			
Rep7	0.521	0.609	0.509	0.558	0.579	0.619	1.00		
Rep8	0.956	0.776	0.784	0.953	0.915	0.928	0.553	1.00	
Reputation	0.962	0.876	0.864	0.966	0.935	0.978	0.637	0.961	1.00

Note. Correlations were expressed down to the third digit .
All relationship were statistically significant at the level of 0.001.

including chi-square, GFI, AGFI, and RMSEA indicate the validity of this model. This model validity represents the fact that the instrument measures what it really intends to (Becker, 1981; Jacob, 1984). After testing all possible models, a CFA model for reputation was established. Some constraints were given following the test of critical difference ratios and some parameters were freed following modification index (MI). Also the chi-square difference tests were utilized when selecting the model. High correlations among error terms are expected phenomena to items only in one dimension. Parameters showing possible relationships were freed following MI to increase the model fit.

The chi-square for the model (Figure 3 & Table 6) was 19.933 (df = 16, p= 0.223). The model parameters were determined by freeing the parameters from the modification index and by assigning equal constraints from the critical difference ratios. The probability that such a chi-square statistic equals or exceeds a value of 19.933 is about 0.223. In this situation, the evidence against the null hypothesis is not significant at the 5% level. Thus, the null hypothesis would not be rejected at any conventional significance level. In the CFA, this chi-square test[17] allows the null hypothesis test that a proposed model provides an acceptable model fit of the observed data because the null hypothesis could not be rejected. Also other model fit indexes were checked. Jorescog and Sorbom's (1989) GFI (=0.968) and AGFI (= 0.928), Bentler and Bonett's (1980) NFI

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[17] A chi-square goodness-of-fit measure is the most popular method for the model fit. The null hypothesis H0 implies that a given model can achieve imperfect fit. Compared to this, the alternative hypothesis H1 represents the perfect fit. Thus, the larger chi-square, the larger the possibility of rejecting the null hypothesis. Rejecting the null hypothesis means that the proposed model cannot be accepted.

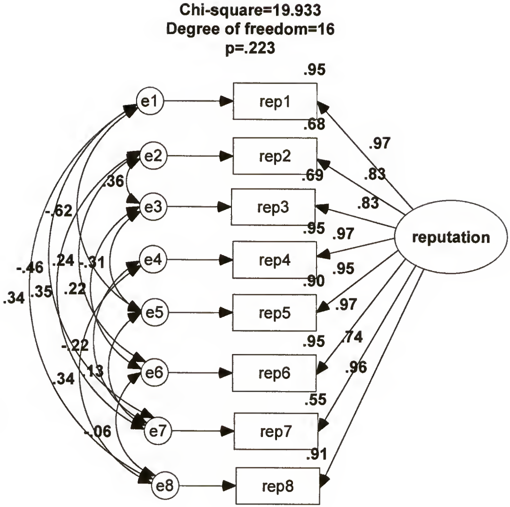


Figure 3.
A confirmatory factor analysis with reputation data for reliability and validity check. Standardized estimates

Table 6.
The Outcome of CFA for Eight Reputation Components

Parameters	Model			
Regression Weights	Unstandardized	S.E.	C. R.	Standardized
Reputation → Rep1	1.000[a]			0.973
Reputation → Rep2	0.637	0.036	17.578*	0.825
Reputation → Rep3	0.720	0.040	17.987*	0.833
Reputation → Rep4	1.040	0.028	37.158*	0.974
Reputation → Rep5	1.083	0.045	24.141*	0.949
Reputation → Rep6	0.905[b]	0.019	47.170*	0.974
Reputation → Rep7	0.543	0.045	12.069*	0.744
Reputation → Rep8	0.905[b]	0.019	47.170*	0.956
Covariances				
e3 ←→ e5	-0.057	0.007	-7.954*	-0.310
e2 ←→ e7	0.080	0.013	6.318*	0.351
e2 ←→ e3	0.080	0.013	6.318*	0.358
e1 ←→ e8	0.024	0.005	4.881*	0.338
e1 ←→ e7	-0.057	0.007	-7.954*	-0.461
e1 ←→ e5	-0.057	0.007	-7.954*	-0.623
e5 ←→ e7	0.024	0.005	4.881*	0.127
e4 ←→ e7	-0.028	0.010	-2.897**	-0.225
e2 ←→ e6	0.024	0.005	4.881*	0.243
e6 ←→ e8	-0.004	0.005	-0.725	-0.058
e3 ←→ e6	0.024	0.005	4.881*	0.222
e4 ←→ e8	0.024	0.005	4.881*	0.335
Variance				
Reputation	1.065	0.127	8.388*	
e1	0.060	0.008	7.596*	
e2	0.203	0.022	9.291*	
e3	0.062	0.008	8.157*	
e4	0.244	0.024	9.999*	
e5	0.138	0.017	8.102*	
e6	0.047	0.006	7.857*	
e7	0.253	0.025	10.090*	
e8	0.082	0.010	8.259*	

Chi-square = 19.933 df = 16 p = 0.223
GFI = 0.968 NFI = 0.991 TLI = 0.997 CFI = 0.998 RMSEA = 0.040

Note. [a] Constraint “1” for identification. [b] equal constraints * P<0.01 ** P<0.05

(=0.984), the Tucker-Lewis's (1973) goodness-of-fit index (TLI) (= 0.997), Bentler's (1990) comparative fit index (CFI) (=0.998), and RMSEA (=0.040) all showed the respectable model fitting. Normally the highly acceptable RMSEA is under 0.05. GFI and AGFI should be more than 0.90. NFI and CFI were included because those two indexes were less dependent on the sample size. TLI and CFI should be close to "1" to be an appropriate model. NFI shows the closeness to the saturated model. The rule of thumb for the model fitting index is quoted:

> Since the scale of the fit indices is not necessarily easy to interpret (e.g., the indices are not squared multiple correlations), experience will be required to establish values of the indices that are associated with various degree of meaningfulness of results. In our experience, models with overall fit indices of less than .9 can usually be improved substantially. These indices, and the general hierarchical comparisons described previously, are best understood by examples (Bentler and Bonnett, 1980, p. 600).

Also, the coefficients from a latent reputation to each reputation component (Rep 1 to Rep 8 in the proposed model, See Figure 3) indicate the high level of validity. Those coefficients range from .74 to .97. All the coefficient were statistically significant ($p < 0.001$).

Lastly, the criterion validity was measured. The mean of all eight reputation scores was designated as a criteria of the instrument. The relationship between this criteria and each item can show the strength of validity for each reputation component. Relations ranged from 0.50 to 0.97. All were statistically significant ($p<0.001$).

The validity of public relations data also was tested by a CFA and SEM model that contained eight items related to public relations expense instead of direct public relations expense data. The consistent result of that test can support the validity of the public relations expense data. Other revenue and market share data were valid and reliable because all of the data were collected in the same format annually. And also those data should be publicly reported under the same definition. This also can be called face validity.

Hypothesis Testing

Proposed hypotheses were tested using the structural equation model. The structural equation model (SEM) is a very flexible and powerful method. SEM is the integration of two approaches: the measurement part and the structural part (Long, 1983). SEM overcomes the limitations of OLS such as simultaneous relationships between independent variables and dependent variables and more than two dependent variables in one model. Especially, the nonrecursive situation can be expected in model testing. However, OLS cannot handle nonrecursive models.

Estimation (Long, 1983; Bollen, 1997; Arbuckle, 1997) involves finding parameters that produce an estimated covariance matrix (Sigma*) that is as close as possible to the sample covariance matrix (Sigma). If Sigma* and Sigma is equal, the fitting function will be close to 0. This is the same with 0 chi-square. It represents a very simple logic. If parameters to make your model covariance close to sample observed covariance are detected, the estimation process is done. Often chi-squares and other fitting indexes do not show the satisfactory level of model fitting. In this case, the model should be revised following theories.

The most important thing in hypotheses testing using SEM is the fact that the proposed model should indicate an appropriate fit. Without this process, hypotheses cannot be tested. In the model testing, there are two approaches: the single equation approach and the system approach (Gujarati, 1995). The SEM analysis follows the system approach that considers all of the equations in the model at the same time. Thus, comparing the model fitting is more important than testing a single parameter in some occasions. As shown in the previous CFA testing, there are many model fitting indexes such as chi-square, GFI, CFI, and RMSEA.

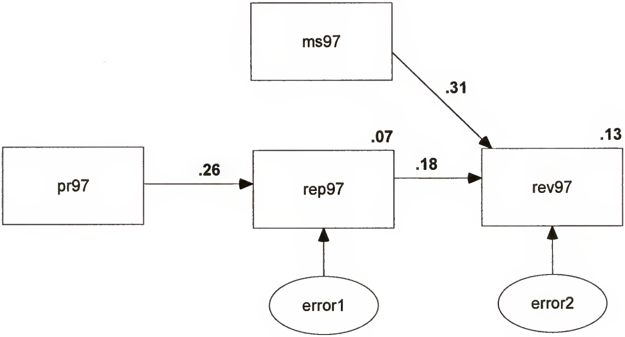
Model Fittings

The proposed model (Figure 4) indicated an appropriate fit (chi-square = 3.068, df = 3, p=0.381). In this situation, the evidence against the null hypothesis is not significant at the 5 percent level (or at any conventional level). In the CFA, this chi-square test allows the null hypothesis test that a proposed model provides an acceptable model fit of the observed data because the null hypothesis could not be rejected in this case (Table 8).

The nonrecursive model is conceivable in any model. For example, as the company's reputation affects the company's revenue, the company's revenue can affect the company's reputation. In this case, the relationship between the company's reputation and the company's revenue is nonrecursive. The nonrecursive models were also tested (Figure 5, Table 9 Model A). The model containing a nonrecursive relationship between reputation and revenue also

Table 7.
Sample Correlations in the Structural Equation Model (SEM) for Hypothesis Testing

	Market Share	PR Expense	Reputation	Revenue
Market Share	1.000			
PR expense	0.077	1.000		
Reputation	-0.082	0.264	1.000	
Revenue	0.296	0.028	0.152	1.000



Chi-square=3.068
Degree of freedom=3
p=.381

Figure 4.
The analysis of the two-stage model of measuring the economic value of public relations at the organizational level.
Standardized estimates

Table 8.
The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level

Parameters	Models			
Regression Weights	Estimate	S.E.	C.R.	Standardized Estimate
PR expense→ Reputation	0.079	0.023	3.413*	0.264
Reputation → Revenue	0.637	0.269	2.368**	0.177
Market Share → Revenue	0.428	0.103	4.134*	0.309
Variance				
PR expense	439.160	49.725	8.832*	
Market Share	265.322	30.042	8.832*	
Error1	36.530	4.136	8.832*	
Error2	442.747	50.131	8.832*	
Squared Multiple Correlations				
Reputation	0.069			
Revenue	0.127			

Chi-square = 3.068
Degree of freedom = 3
p = .381

Model fitting indexes

GFI = 0.990
AGFI = 0.968
NFI = 0.910
TLI = 0.995
CFI = 0.998
RMSEA = 0.012

Note. * p < 0.01
** P < 0.05

showed an appropriate model fitting (chi-square = 2.611, df = 2, p = .271). In this case, the proposed model is nested in the model containing a nonrecursive relationship. Chi-squares can be statistically compared to choose the better model.

The difference of chi-square tests is used to test nested models. The difference of chi-square tests also has a chi-square distribution. The improvement in fit obtained by adding an additional parameter to the model containing the constraint can be tested by the difference of chi-squares between two models. In this case, the difference of chi-squares is 0.457 (3.068 – 2.611) and the difference of degree of freedom is 1 (3-2). If the difference of chi-square exceeds the critical value in the statistical table with the difference of degree of freedom, the hypothesis that the constraints imposed on the model containing the nonrecursive relationship to form the proposed model can be rejected. However, the hypothesis could not be rejected in this case. Thus, relaxing the constraint (here, adding a nonrecursive relationship) did not result in any statistically significant improvement. The initial proposed model (Figure 4) is supported compared to the nonrecursive model (Figure 5).

Also any other possible model did not show any improvement in model fitting (See the Figure 6 and the Table 9: model B containing the parameter from market share to reputation). Even though the model containing a parameter from market share to reputation indicated an appropriate model fitting (chi-square = 1.285, df = 2, p = .526), the difference of chi-squares test (1.783 = 3.068 – 1.285) did not show any significant improvement in the model specification.

Chi-square=2.611
Degree of freedom=2
p=.271

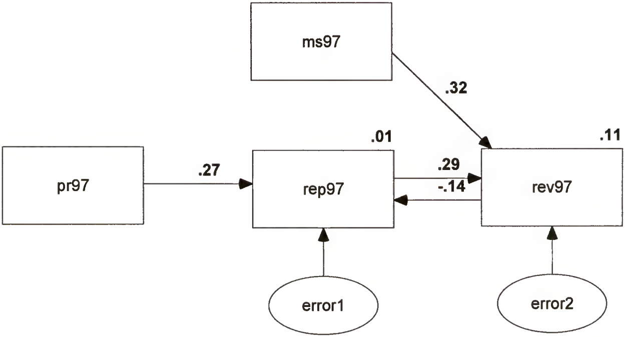


Figure 5.
The analysis of the two-stage model with a nonrecursive relationship between reputation and revenue.
Standardized estimates

Chi-square=1.285
Degree of freedom=2
p=.526

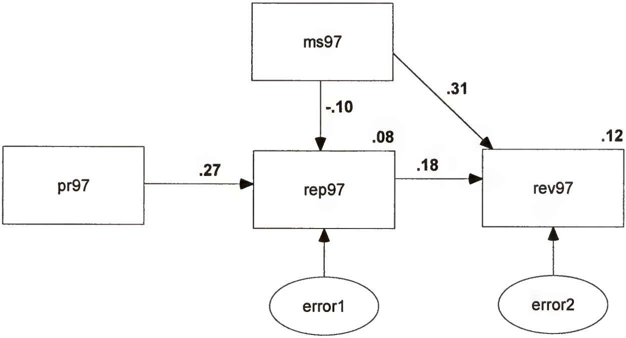


Figure 6.
The analysis of the two-stage model with an added parameter
from market share to reputation.
Standardized estimates

Table 9.

The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level Using a Nonrecursive Parameter (Model A) and a Parameter from Market Share to Reputation (Model B)

Parameters	Model A		Model B	
Regression Weights	Estimate	C. R.	Estimate	C. R.
PR expense→ Reputation	0.268	3.296*	0.271	3.535*
Reputation → Revenue	0.294	1.563^{ns}	0.179	2.361**
Market Share → Revenue	0.319	4.207*	0.311	4.112*
Revenue → Reputation	-0.137	-0.663^{ns}	NA	
Market Share → Reputation	NA		-0.311	-1.343^{ns}
Variance				
PR expense	439.160	8.832*	439.160	8.832*
Market Share	265.322	8.832*	265.322	8.832*
Error1	38.807	6.151*	36.115	8.832*
Error2	449.680	8.091*	127.698	8.832*
Squared Multiple Correlations				
Reputation	0.008		0.084	
Revenue	0.112		0.117	
Stability index	0.008			
Chi-square	2.611		1.285	
Degree of freedom	2		2	
p	0.271		0.526	
Model fitting indexes				
GFI	0.992		0.996	
NFI	0.923		0.962	
TLI	0.935		1.076	
CFI	0.978		1.000	
RMSEA	0.044		0.000	

Note. * $p < 0.01$
** $P < 0.05$
- All regressions estimates were standardized.

Most notably, both the model containing a nonrecursive relationship and the model containing an added parameter (market share → reputation) did not produce significant coefficients as shown in Table 9. The parameter estimate from the company's revenue to the company's reputation in Model A is –0.137 (C.R. = -0.663)[18] and is not statistically significant. The parameter estimate from market share to the company's reputation in model B is -0.103 (C.R. = -1.343) and is not statistically significant. Thus, the proposed two-stage model is supported by hypothesis testing.

Hypotheses

Hypothesis 1) Increasing public relations expense will have a positive relationship on the company's reputation.

Hypothesis 2) Improving the reputation of the company will have a positive relationship on the company's revenues.

Hypothesis 3) Market share will have a positive relationship on the company's revenues.

Based on the model fit, each hypothesis was tested. Table 8 shows the parameter estimates of the proposed model. H1 is supported. Public relations expense is positively related to the company's reputation (estimate = 0.264, C.R. = 3.413). The critical ratio (C. R.) is obtained by dividing the estimate by its standard error. The ratio is interpreted as a z-statistic. Thus using a significance level of .05, critical ratios greater than 1.96 would be called significant (within small samples, t-statistic can be used) (Kline, 1998). From the standardized estimate, when a unit of public relations expense increases, reputation is improved by 0.28 unit. This positive relationship between public relations expense and public relations goal indicates the empirical effectiveness of public relations activities.

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[18] Parameter estimates described here are all standardized estimates. However, the critical ratio (C.R.) is calculated by dividing unstandardized estimates by standard error (S.E.).

H2 is supported. The company's reputation is positively related to the company's revenue (estimate = 0.177, C.R. = 2.368). The estimate is statistically significant ($p < 0.05$). From the standardized estimate, when a unit of the company's reputation increases, 0.177 unit of the company's revenue can be increased. This positive relationship between the public relations' goal and the company's goal showcases the bottom line impact of achieving the public relations' goal.

H3 is supported. Market share is positively related to the company's revenue (estimate = 0.309, C.R. = 4.134). The estimate is statistically significant ($p < 0.05$). The positive relationship between market share and revenue is understandable because high market share can be correlated with revenue increase.

By the statistically significant support for both hypothesis one and two, the attainability of the two-stage model for measuring the economic impact of public relations expense also is supported. Squared multiple correlation (SMC) represents the explained percentage of dependent variables by the proposed model. In Table 8, SMC for the company's reputation is 0.069 and SMC for the company's revenue is 0.127. The proposed model can explain 12.7 percent of the company's revenue and 6.9 percent of reputation.

Hypotheses and the feasibility of the two-stage model were successfully supported in all aspects. Other analyses were added to further check the efficacy of the proposed model and give some more perspectives into the proposed model.

First, raw reputation scores instead of increasing rates were used. Arguments for this test lie in the effects of high-level reputation scores on the proposed model. The argument for this test is that no matter what increasing rates of public relations expense are, their effects depend on high reputation. The bottom-line impact of increasing public relations expense is only related to the high reputation group. Also, it can be interpreted that increasing public relations expense among the low-reputation group has less of an effect.

The model did not show an appropriate fit (chi-square = 14.676, df = 3, p = 0.002) (Figure 7). Also, coefficients from public relations expense to reputation (estimate = 0.100, C.R.= 1.260) and from reputation to revenue (estimate = 0.056, C.R. = 0.732) were not significant at the level of 0.05 (See Table 12). Thus, the model using the raw reputation scores indicated that the bottom-line impact of public relations did not lie only in the high-reputation companies. The inferiority of this model can be detected from SMCs also (Table 12).

SMCs for reputation and revenue were 0.010 and 0.082 (See Table 12). They were less than the model using the increasing and decreasing rate of reputation. However, this model also showed the positive relationships among variables. Even though the regression coefficients were not statistically significant, the positive relationships among variables were not changed.

Table 10
Sample Correlations of Variables in the Model Using Raw Reputation Scores Instead of Using the Increasing and Decreasing Rate

	ms	pr	reputation	revenue
ms	1.000			
pr	0.077	1.000		
reputation	0.296	0.100	1.000	
revenue	0.296	0.028	0.139	1.000

Table 11
Sample Correlations of Three-year Data

	ms	pr	reputation	revenue
ms	1.000			
pr	0.074	1.000		
reputation	0.067	0.257	1.000	
revenue	0.151	-0.046	0.105	1.000

Chi-square=14.676
Degree of freedom=3
p=.002

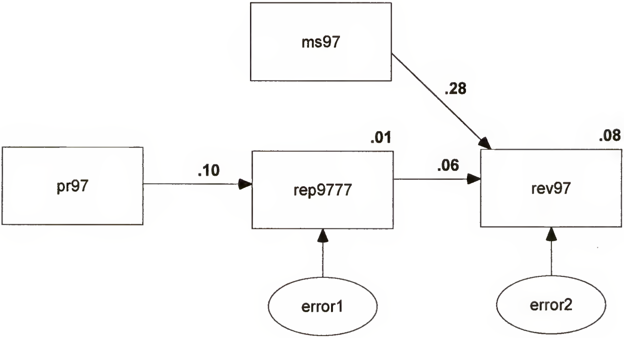

Figure 7.
The analysis of the two-stage model of measuring the economic
value of public relations at the organizational level
with raw scores of reputation.
Standardized estimates
Note: rep9777: raw scores of reputation

Table 12.
The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level when Raw Reputation Scores Were Used Instead of the Increasing and Decreasing Rate

Parameters	Models			
Regression Weights	Estimate	S.E.	C.R.	Standardized Estimate
PR expense→ Reputation	0.004	0.003	1.260^{ns}	0.100
Reputation → Revenue	1.400	1.913	0.732^{ns}	0.056
Market Share → Revenue	0.385	0.105	3.660*	0.281
Variance				
PR expense	439.160	49.725	8.832*	
Market Share	265.322	30.042	8.832*	
Error1	0.793	0.090	8.832*	
Error2	457.126	51.759	8.832*	
Squared Multiple Correlations				
Reputation	0.010			
Revenue	0.082			

Chi-square = 14.676
Degree of freedom = 3
p = .002

Model fitting indexes

GFI = 0.957 AGFI = 0.857 NFI = 0.527
TLI = 0.068 CFI = 0.534 RMSEA = 0.158

Note. * p < 0.01
** P <0.05

Second, the three-year pooled data were tested to check the validity of the proposed model over different years. Not all the companies had data from 1997 to 1995. Only 139 out of 157 companies had complete three-year data because of incomplete answers, merger, acquisition, and new inclusions to the database. Thus, 417 data (139*3) were analyzed after stacking all three-year data.

The chi-square test showed an appropriate model fitting (chi-square = 6.327, df = 3, p = .097) (see in Figure 8 & Table 13). The parameter estimate from public relations expense to the company's reputation was 0.257 (C.R. = 5.433) and was statistically significant at the level of 0.01. Thus, Hypothesis one was supported by the three-year data. The parameter estimates from reputation to revenue (0.096, C.R. = 1.978) and from market share to revenue (0.145, C.R. = 3.006) were statistically significant at the level of 0.05 and 0.01 respectively. Hypothesis two and Hypothesis three were supported across the three-year data.

The explanatory power of the model was decreased compared to the one-year data. As shown in Table 8, SMC for reputation is 0.066 and SMC for revenue is 0.030. However, positive relationships among variables and SMCs showed the same pattern with the one-year data. Thus, there is no reason to discount that the proposed model can be applied over a long period, especially since model fitting indexes indicated stable fitting scores: GFI (= 0.992), AGFI (= 0.975), CFI (= 0.921), and RMSEA (= 0.052).

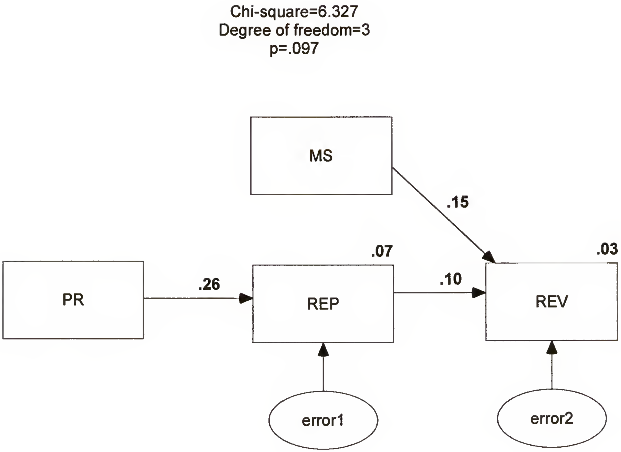

Figure 8.
The analysis of the two-stage model of measuring the economic value of public relations at organizational level using three-year panel data from 1995 to 1997.
Standardized estimates

Table 13.
The Outcome of Three-year Analysis of the Two-stage Model of Measuring the Economic Value of Public Relations at the Organizational Level

Parameters	Model			
Regression Weights	Estimate	S.E.	C.R.	Standardized Estimate
PR expense→ Reputation	0.099	0.018	5.433*	0.257
Reputation → Revenue	0.276	0.139	1.978**	0.096
Market Share → Revenue	0.208	0.069	3.006*	0.145
Variance				
PR expense	295.538	20.492	14.422*	
Market Share	176.524	12.240	14.422*	
Error1	40.674	2.820	14.422*	
Error2	352.361	24.432	14.422*	
Squared Multiple Correlations				
Reputation	0.066			
Revenue	0.030			

Chi-square = 6.327
Degree of freedom = 3
p = 0.097

Model fitting indexes

GFI = 0.992 AGFI = 0.975 NFI = 0.869
TLI = 0.843 CFI = 0.921 RMSEA = 0.052

Note. * $p < 0.01$
** $P < 0.05$

Research Questions

Research Question One

R. Q. 1) Does the two-stage model of public relations expense-public relations goal-organizational goal explain the economic impact of public relations better than the direct model between public relations expense and returns?

The model without reputation showed an appropriate model fitting (chi-square = 0.926, df = 1, p = 0.336). The three-year data also showed an appropriate model fitting (chi-squre = 2.257, df = 1, p = 0.133). It is common to have an appropriate model fitting with a smaller number of variables. Also, this model is simply a multi-regression model. In this case, having statistically significant parameter estimates is more important than mere model fitting indexes.

As described in Figure 9, Figure 10, and Table 15, the direct model between public relations expense and revenue has a serious problem. Both coefficients in the one-year (estimate = 0.005, C.R. = 0.064) and the three-year data (estimate = - 0.063, C.R. = -1.181) are statistically not significant. Furthermore, the parameter estimate in the three-year data showed the negative relationship between public relations expense and the company's revenue. In the two-stage model, revenue was explained up to 12.7 percent. But this direct model only explained 8.7 percent in the one-year case and 2.7 percent in the three-year case. A negative relationship between public relations expense and the

Table 14.

Sample Correlations of One-year and Three-year Data in the Model without Reputation

One-year Three year	pr	ms	revenue
pr	1.000 1.000		
ms	0.077 0.074	1.000 1.000	
revenue	0.028 -0.046	0.296 0.151	1.000 1.000

Chi-square=.926
Degree of freedom=1
p=.336

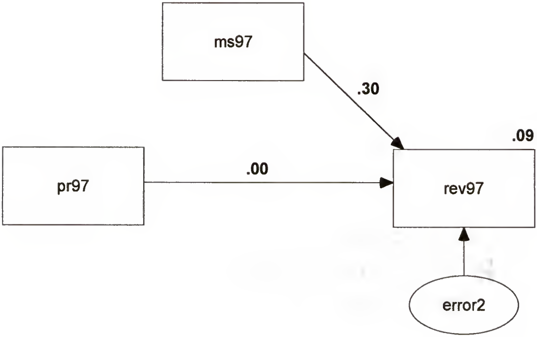

Figure 9.
The analysis of direct impact of public relations expense
on revenue with one-year data when reputation is not included.
Standardized estimates

Chi-square=2.257
Degree of freedom=1
p=.133

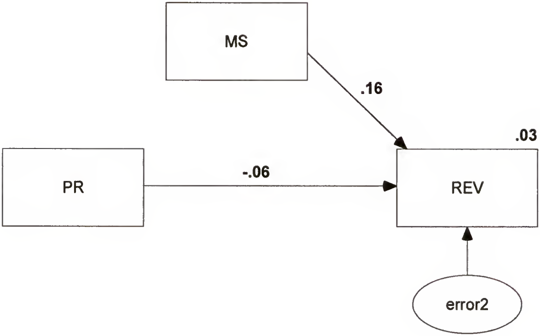

Figure 10.
The analysis of direct impact of public relations expense
on revenue with three-year data when reputation is not included.
Standardized estimates

Table 15.
The Outcome of the Model Measuring the Direct Impact of Public Relations Expense on the Company's Revenue with One-year Data (Model A) and Three-year Data (Model B)

Parameters	One-year Model		Three-year Model	
Regression Weights	Estimate	C. R.	Estimate	C. R.
PR expense→ Reputation	0.005	0.064^{ns}	-0.057	-1.181^{ns}
Market Share → Revenue	0.296	3.866*	0.155	3..216*
Variance				
PR expense	439.160	8.832*	295.538	14.422*
Market Share	265.322	8.832*	176.524	14.422*
Error2	458.546	8.832*	354.479	14.422*
Squared Multiple Correlations				
Revenue	0.087		0.027	
Chi-square	0.926		2.257	
Degree of freedom	1		1	
p	0.336		0.133	
Model fitting indexes				
GFI	0.996		0.996	
NFI	0.939		0.830	
TLI	1.018		0.633	
CFI	1.000		0.878	
RMSEA	0.000		0.055	

Note. * $p < 0.01$ ** $P < 0.05$

^{ns} Not significant

- All regression estimates were standardized.

company's revenue is theoretically too shallow. Thus, the model should be specified again by including some more variables. These results amplify the need of reputation in the model for measuring the bottom-line impact of public relations activities and encourage the use of the two-stage model.

Research Question Two

R. Q. 2) Does public relations expense indicate a consistent effect on the public relations goal and the organizational goal both from the observed data and the latent data to confirm its effect?

A latent variable of public relations expense was used to check the validity and reliability of public relations expense data using CFA and SEM together. Each company has a different budgetary system and its compiling of data must be different. The problem of validity and reliability is inherent because of this reality. Thus, the latent variable of public relations expense with eight specific expense items can test whether the public relations expense data collected are valid and reliable or not. Those eight items are expense for media/press relations, employee communications, local community relations, government affairs, environment and safety affairs, investor relations, contributions, and corporate advertising.

Figure 11 shows the outcome of a CFA and SEM testing. The model showed an appropriate model fitting (chi-square = 47.618, df = 40, p = 0.190). The model with the perception of the increasing or decreasing trend in each public relations expense item indicated the similar result with the previous model of the observed public relations expense data.

Table 16.
Sample Correlations of Variables in the Model Including an Unobserved Public Relations Expense and Observed Eight Public Relations Expense Items

	ms	rep	rev	item8	item7	item6	item5	item4	item3	item2	item1
ms	1.00										
rep	-0.08	1.00									
rev	0.30	0.15	1.00								
item8	0.07	0.33	0.04	1.00							
item7	0.95	0.28	0.02	0.86	1.00						
item6	0.15	0.31	0.08	0.84	0.82	1.00					
item5	0.11	0.23	-0.09	0.67	0.71	0.65	1.00				
item4	0.17	0.24	0.08	0.75	0.76	0.76	0.75	1.00			
item3	0.02	0.28	-0.03	0.65	0.72	0.61	0.77	0.75	100		
item2	0.06	0.29	0.03	0.63	0.66	0.72	0.65	0.71	0.72	1.00	
item1	0.15	0.27	0.13	0.77	0.80	0.81	0.66	0.76	0.67	0.69	1.00

Note. Correlations are expressed up to the second digit.
item1 = media/press relations, item2 = employee communications, item3 = local community relations, item4 = government affairs, item5 = environment and safety affairs, item6 = investor relations, item7 = contributions, item8 = corporate advertising.

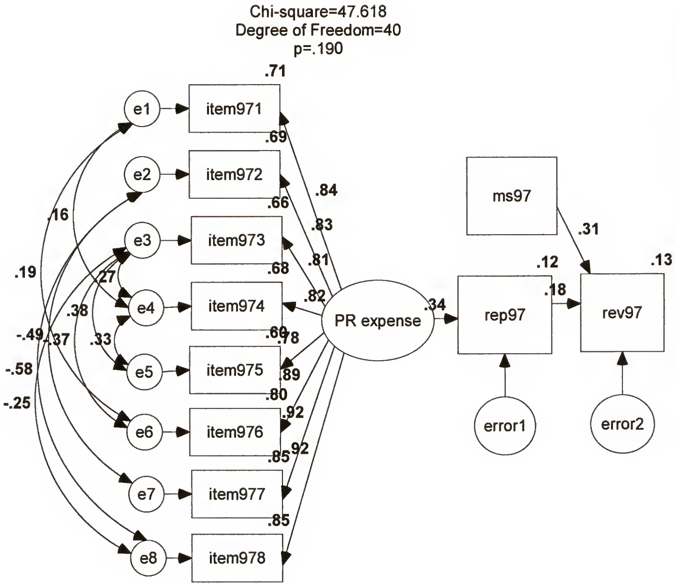

Figure 11.
The analysis of the two-stage model of measuring the economic value of public relations using public relations data as a latent variable.
Standardized estimates
Note. item1=media/press relations, item2=employee communications, item3= local community relations, item4=government affairs, item5=environment and safety affairs, item6=investor relations, item7=contributions, item8= coporate advertising.

All regression weights showed the positive relationship among variables, which is consistent with the previous model (Table 17). The regression weight from public relations expense to reputation is 0.340 (CR = 4.373) and statistically significant ($p < 0.01$). The regression weights from reputation to revenue (estimate = 0.177, C.R. = 2.368, $p < 0.05$) and from market share to revenue (estimate = 0.309, C.R. = 4.134, $p < 0.01$) are the same with the previous model. The coefficient and C.R. between public relations expense and reputation is similar with the previous case.

The regression weights from an unobserved public relations expense to each observed public relations item presented similar impacts ranging from 0.777 to 0.924 (See Table 17).

Coefficients from a latent variable to observed items represent the level of validity. Also the model fit indexes including chi-square, GFI (= 0.948), AGFI (= 0.913), and RMSEA (= 0.035) indicate the validity of this model (Table 17). Thus, the validity of the public relations expense data was supported by this test. The Cronbach's Alpha of these eight items was 0.9546, which indicates an acceptable level for reliability.

Some correlations between error terms were freed following modification index (MI). In this model, the correlations between error terms showed positive (e5-d4, e3-e5, e1-e6, e1-e4, e3-e4) or negative (e3-e6, e2-e8, e2-e7, e3-e8) relationships. Most relationships were statistically significant ($p<0.05$). SMC for reputation and revenue was 0.115 and 0.127. The explanatory power for

Table 17.
The Outcome of the Bottom-line Evaluation Model at the Organizational Level Using Public Relations Expense Data as a Latent Variable

Parameters	Models			
Regression Weights	Estimate	S.E.	C.R.	Standardized Estimate
PR expense→ Reputation	1.596	0.365	4.373*	0.340
Reputation → Revenue	0.637	0.269	2.368**	0.177
Market Share → Revenue	0.428	0.103	4.134*	0.309
PR expense → Item1	1.000			0.844
PR expense → item2	0.997	0.059	16.893*	0.829
PR expense → item3	0.997	0.059	16.893*	0.812
PR expense → item4	0.997	0.059	16.893*	0.822
PR expense → item5	0.997	0.059	16.893*	0.777
PR expense → item6	1.203	0.065	18.616*	0.894
PR expense → item7	1.203	0.065	18.616*	0.922
PR expense → item8	1.279	0.078	16.335*	0.924
Covariance				
e5 ←→ e4	0.328	0.087	3.793*	0.332
e3 ←→ e6	-0.283	0.064	-4.417*	-0.368
e3 ←→ e5	0.393	0.098	3.999*	0.382
e2 ←→ e8	-0.368	0.078	-4.726*	-0.584
e1 ←→ e6	0.127	0.046	2.775*	0.186
e1 ←→ e4	0.127	0.046	2.775*	0.163
e3 ←→ e4	0.235	0.081	2.893*	0.267
e2 ←→ e7	-0.295	0.069	-4.248*	-0.486
e3 ←→ e8	-0.171	0.065	-2.624*	-0.254

(Continued)

(continued)
Variance

PR expense	1.777	0.269	6.617*
Market Share	265.322	30.042	8.832*
Error1	34.730	3.939	8.817*
Error2	442.747	50.131	8.832*
e1	0.718	0.086	8.381*
e2	0.803	0.110	7.335*
e3	0.915	0.116	7.870*
e4	0.846	0.099	8.536*
e5	1.156	0.136	6.527*
e6	0.649	0.081	7.973*
e7	0.457	0.069	6.595*
e8	0.495	0.082	6.019*

Squared Multiple Correlations

Reputation	0.115
Revenue	0.127
item1	0.712
item2	0.687
item3	0.659
item4	0.676
item5	0.604
item6	0.799
item7	0.854
item8	0.854

Chi-square = 47.618
Degree of freedom = 40
p = .190

Model fitting indexes

GFI = 0.948	AGFI = 0.913	NFI = 0.965
TLI = 0.992	CFI = 0.994	RMSEA = 0.035

Note. * $p < 0.01$ ** $P < 0.05$
Item1 = media/press relations, item2 = employee communications, item3 = local community relations, item4 = government affairs, item5 = environment and safety affairs, item6 = investor relations, item7 = contributions, item8 = corporate advertising.

reputation was increased from 6.9% to 11.5%. This may come from the fact that a latent public relations expense variable can explain reputation a little better than an observed public relations expense variable.

Wrapping up all arguments presented, this double checking process confirmed that the proposed model for measuring the bottom-line impact of public relations activities is valid and reliable.

Research Question Three

R. Q. 3) How do public relations expense and reputation contribute to the organization's bottom-line directly and indirectly?
And how much do they affect the bottom line?

From the model fitting and SMCs, the direct and indirect effect cannot be measured. As described in the proposed two-stage model, public relations expense affects reputation and reputation affects revenue. However, it can be assumed that public relations expense affects revenue indirectly through reputation. This direct and indirect effect was measured by way of total effects.

As shown in Table 18, all public relations expense effects showed positive scores. The fact that the effect is positive means that, if all other things are equal, relatively high public relations expense is associated with relatively high reputation and revenue data. In Model A, public relations expense explains five percent of revenue through increasing reputation.

One-year (Model A) and three-year (Model C) data showed the same positive effects. Also, a latent public relations variable measured with eight

Table 18.
Total Effects of Public Relations Expense on Reputation and Revenue

Model		Public relations	Market share	Reputation
Model A*	Reputation	0.079	0.000	0.000
	Revenue	0.050	0.428	0.637
Model B**	Reputation	1.596	0.000	0.000
	Revenue	1.016	0.428	0.637
	Item 1	1.000	0.000	0.000
	Item2	0.997	0.000	0.000
	Item3	0.997	0.000	0.000
	Item4	0.997	0.000	0.000
	Item5	0.997	0.000	0.000
	Item6	1.203	0.000	0.000
	Item7	1.203	0.000	0.000
	Item8	1.279	0.000	0.000
Model C***	Reputation	0.099	0.000	0.000
	Revenue	0.027	0.208	0.276
Model D****	Reputation	0.004	0.000	0.000
	Revenue	0.006	0.385	1.400

Note. * The two-stage model of measuring the economic value of public relations with one year data.

** The model with eight public relations items and a latent public relations expense.

*** The model with three year data.

**** The model with raw scores as the company's reputation.

- Item1 = media/press relations, item2 = employee communications, item3 = local community relations, item4 = government affairs, item5 = environment and safety affairs, item6 = investor relations, item7 = contributions, item8 = corporate advertising.

perceptions of public relations activities indicated the similar outcome (Model B). All of the parameter estimates are positive for reputation and revenue. Even in the model with raw reputation scores, all the parameters show positive effects. The bottom-line impact of public relations expense is supported by including reputation as described in the proposed two-stage model.

Research Question Four

R. Q. 4) What are the differences of model coefficients among different industry categories? Among different reputation levels? And among other revenue levels?

First, the *Fortune* database categorized *Fortune* companies into service and manufacture companies (Troy, 1993). Service companies (n = 64) with no manufacturing functions include diversified service, retailers, transportation, utilities, health care, telecommunication, wholesale, waste, computing, hotels, entertainment, information service, commercial banking, diversified financial, saving institutions, and life insurance. Manufacture (n = 93) companies imply aerospace, apparel, beverages, building materials and glass, chemicals, computer and office equipment, electronics and electrical equipment, food, forest and paper products, industrial equipment, metals, mining and crude oil production, petroleum refining, rubber, pharmaceuticals, textiles, and transportation equipment.

This research question is tested with the difference of chi-squares test. It can be a puzzle to investigate whether the parameter estimates are different for the two groups or not. However, the difference of chi-square test solves this

Table 19.
Sample Correlations of Variables for Service (n = 64) and Manufacture Companies (n = 93)

Service Manufacture	ms	pr	reputation	revenue
ms	1.000			
pr	1.105 0.089	1.000 1.000		
reputation	-0.071 -0.149	0.243 0.339	1.000 1.000	
revenue	0.381 0.031	0.120 -0.099	0.149 0.102	1.000 1.000

Table 20.

The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations in the Organizational Level between Service Companies (n = 64) and Manufacture Companies (n = 93)

Parameters	Model A[a]		Model B[b]	
Regression Weights	service	industrial	service and industrial	
PR expense→ Reputation	0.243**	0.339*	0.311*	0.289*
Reputation → Revenue	0.176***	0.109^{ns}	0.072^{ns}	0.149^{ns}
Market Share → Revenue	0.391*	0.047^{ns}	0.086***	0.162***
Variance				
PR expense	597.911*	317.855*	597.911*	317.855*
Market Share	363.051*	187.462*	363.051*	187.462*
Error1	45.267*	28.167*	45.539*	28.261*
Error2	815.820*	125.704*	918.050*	127.574*
Squared Multiple Correlations				
Reputation	0.059	0.115	0.096	0.084
Revenue	0.184	0.014	0.013	0.048
Chi-square	7.755		17.252	
Degree of freedom	6		9	
p	0.257		0.045	
Model fitting indexes				
GFI	0.976		0.949	
NFI	0.786		0.524	
TLI	0.885		0.546	
CFI	0.928		0.659	
RMSEA	0.043		0.077	

Note. [a] Model A: parameter estimates are different for two groups.

[b] Model B: parameter estimates are same for two groups.

* $p < 0.01$ ** $p < 0.05$ *** $p < 0.10$

- All regressions estimates were standardized. Thus unstandardized regression weights of both groups in Model B is the same.

problem. In Table 20, Model A implies that two groups (service companies and manufacture companies) have the different parameter estimates. And Model B assumed that two groups have the same regression weights. This is a widely used method in SEM:

> Suppose our main interest lies with the regression weights, and we entertain the hypothesis (Model B) that the girls and boys have the same regression weights. Under this model, the variances and covariances of the exogenous variables would still be allowed to differ between the groups while the regression weights are group invariant. ... If Model B is confirmed by the data, the same regression weights can be used for all groups, which simplifies the prediction of the endogenous variables. Another advantage of Model B will be that the regression weights themselves will be estimated more efficiently (Arbuckle, 1997, p. 433).

Thus, Model B has more constraints than model A. As explained in the nonrecursive model case for hypothesis testing, Model B is nested in Model A because Model B can be made by constraining the parameter. The difference of chi-squares between Model A and Model B decides whether the null hypothesis that the constraints are valid can be rejected or not. If the difference score exceeds the chosen critical value, the null hypothesis can be rejected.

In Table 20, Model A showed an appropriate model fitting (chi-square = 7.755, df = 6, p = 0.257). But Model B did not show an appropriate model fitting (chi-square = 17.252, df = 9, p = 0.045). The difference of chi-squares was 9.498 (df = 9-6=3). Thus, the null hypothesis that the constraints are valid can be rejected. Service and manufacture companies have the different regression weights and should be treated in a different way. This difference can be detected from the regression weights of both groups in Model A (See Table 21). The

Table 21.

The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C that Makes Every Parameter the Same for Service and Manufacture Companies including Variances and Covariances.

Statistics	Model A -	Model B	Model A -	Model C
Chi-square	7.755	17.252	7.555	101.893
DF	6	9	6	13
P	0.257	0.045	0.257	0.000
Difference of Chi square	9.948		94.138	
Difference of DF	3		7	
Probability of accepting constraints	0.023 (reject model B)		0.000 (reject Model C)	
Difference of NFI	0.262		2.599	
Difference of IFI	0.314		3.116	
Difference of RFI	0.207		2.169	
Difference of TLI (Model A-B, or A-C)	0.309		3.244	

regression weight from reputation to revenue showed a difference between the service companies (estimate = 0.176) and the manufacture companies (estimate = 0.109). The company's reputation affect the company's revenue in the service companies more than in the manufacture companies. Also, the regression weight in the manufacture companies was not statistically significant at any conventional significance level. In fact, reputation is the most important factor among the service companies that depend on reputation of their service for company survival.

Besides that, market share also affects the company's revenue in the service companies (estimate = 0.391) more than in the manufacture group (estimate = 0.047). The regression weight in the manufacture companies was statistically not significant. Also, revenue was explained more in the service companies (SMC = 18.4 %) than in the manufacture companies (SMC = 1.4 %). The proposed model should be measured differently by this industry categorization. However, all of the parameter estimates were positive and statistically significant at the level of 0.10. Usually using .10 level of significance for each group is appropriate in SEM due to the complexity of the model (Long, 1983).

Another possibility was tested. Additional constraints were added to model B to make every parameter the same for the service and manufacture companies. "This, of course, implies that the entire variance/covariance matrix of the observed variables must be the same" (Arbuckle, 1997, 439). This model is

Model C. However, Model C also did not show an appropriate model fit (chi-squre = 101.893, df = 13, p = 0.000). The difference of chi-square test also assured the rejection of Model C (Table 21). Thus, service and manufacture companies cannot have the same variance/covariance matrix. From the outcome, Model A is the most appropriate model for this categorization.

Second, research in the marketing field used the category of industrial and consumer businesses (Szymanski, Bharadwaj, and Varadarajan, 1993; Buzzell and Gale, 1987). Most studies follow the Standard Industrial Classification Manual for categorization (The Bureau of Census, 1987). Consumer companies (n = 90) imply companies working in the consumer market. Industrial companies (n=67) denote the companies dealing with the other companies in the producer market. Consumer companies include apparel, beverage, pharmaceuticals, food services, telecommunications, food and drug stores, life insurance, hotel, airlines, specialist retailing, entertainment, general merchandise, apparel, tobacco, and publishing. Industrial companies include petroleum, forest, chemicals, electric, rubber, industrial parts, engineering, textiles, metals, building, mining, transportation equipment, and aerospace.

In Table 23, Model A showed an appropriate model fitting (chi-square = 4.070, df = 6, p = 0.667) and also Model B showed an appropriate model fitting (chi-square = 7.214, df = 9, p = 0.615). The difference of chi-squares was 3.144 (df = 9 - 6 = 3). Thus the null hypothesis that the constraints are valid cannot be rejected (p = 0.667). This means Model B that contains all of the constraints (all of the regression weights are the same) is a better model than Model A. But the

Table 22.
Sample Correlations of Variables for Consumer Companies (n= 90) and Industrial Companies (n = 67)

Consumer Industrial	ms	pr	reputation	revenue
ms	1.000			
pr	0.030 0.092	1.000 1.000		
reputation	-0.134 0.025	0.232 0.324	1.000 1.000	
revenue	0.301 0.126	0.025 -0.063	0.137 0.192	1.000 1.000

Table 23.

The Outcome of the Two-stage Model of Measuring the Economic Impact of Public Relations in the Organizational Level between Consumer Companies and Industrial Companies

Parameters	Model A[a]		Model B[b]	
Regression Weights	Consumer	Industrial	Consumer	Industrial
PR expense→ Reputation	0.232**	0.324**	0.234*	0.321*
Reputation → Revenue	0.179***	0.189[ns]	0.139**	0.203**
Market Share → Revenue	0.322*	0.121[ns]	0.197*	0.248*
Variance				
PR expense	477.903*	363.887*	477.903*	363.887*
Market Share	360.131*	108.020*	360.131*	108.020*
Error1	49.447*	19.061*	49.447*	19.061*
Error2	670.577*	121.062*	684.372*	123.527*
Squared Multiple Correlations				
Reputation	0.054	0.105	0.080	0.103
Revenue	0.136	0.050	0.527	0.103
Chi-square	4.070		7.214	
Degree of freedom	6		9	
p	0.667		0.615	
Model fitting indexes				
GFI	0.987		0.977	
NFI	0.870		0.770	
TLI	1.199		1.123	
CFI	1.000		1.000	
RMSEA	0.000		0.000	

Note. [a] Model A: parameter estimates are different for two groups.

[b] Model B: parameter estimates are same for two groups.

* $p < 0.01$ ** $p < 0.05$ ***$p < 0.10$ [ns] not significant

- All regressions estimates were standardized. The unstandardized regression weights of consumer and industrial companies have the same values.

probability is marginal between the acceptance and the rejection of the hypothesis.

This result is consistent with the outcome of regression weights in Model A and Model B (Table 23). Consumer companies and industrial companies in Model A showed similar regression weights, but industrial companies did not produce statistically significant regression weights from reputation to revenue and from market share to revenue. In Model B, all of the regression weights in Model A and Model B were statistically significant at the level of 0.05. Thus, this test supports same coefficients of public relations expense and reputation on the company's bottom line between the consumer companies and the industrial companies. All of the parameter estimates in Model A and Model B showed positive relationships among variables. This also supports the two-staged proposed model in spite of different industries. However, as shown in Model A (Table 23), consumer and industrial companies seem to have different parameters in the long run because only industrial companies showed insignificance of the coefficients in Model A compared to consumer companies.

From Table 24, the chi-square difference of Model A and Model C is 90.142 (df = 13 - 6 = 7). The null hypothesis that Model C is a better model than Model A is rejected. The difference of NFI, IFI, RFI, and TLI between Model A and Model B is close to "0." This means that Model A by freeing some parameter estimates does not improve the model fitting from Model B. In the case of the difference between Model A and Model C, the difference of NFI, IFI, RFI, and TLI is not

Table 24.

The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C that Makes Every Parameter the Same for Consumer and Industrial Companies including Variances and Covariances.

Statistics	Model A -	Model B	Model A -	Model C
Chi-square	4.070	7.214	4.070	94.212
DF	6	9	6	13
P	0.667	0.615	0.667	0.000
Difference of Chi square	3.144		90.142	
Difference of DF	3		7	
Probability of accepting constraints	0.370 (cannot reject model B)		0.000 (reject Model C)	
Difference of NFI	0.100		2.874	
Difference of IFI	0.124		3.554	
Difference of RFI	0.047		2.513	
Difference of TLI (Model A-B, or A-C)	0.076		4.070	

Note. From the difference of chi-squares, Model B and Model C can be compared from this table. Model C is also rejected from this comparison.

close to “0.” This means Model A can be improved a lot from Model C. From the difference of chi-squares, Model B and Model C also can be compared from the Table 24. Model C is rejected from this comparison. Model B is the most appropriate model from all of the comparisons. Thus, the regression weights should be applied in the same way for the consumer companies and the industrial companies.

Third, companies were categorized into high-reputation companies (n= 48) and low-reputation companies (n = 47). From the frequency of reputation scores, companies in the highest 30 percent were chosen as the high-reputation group and companies in the lowest 30 percent were chosen as the low-reputation group. Companies in the middle 40 percent were not considered for the better distinction between two groups. The high-reputation group was made up of the companies that have reputation scores more than 7.10. The low-reputation group was the companies that have reputation scores less than 6.26.

In Table 26, Model A that the high-reputation and the low-reputation group have different parameter estimates showed an appropriate model fitting (chi-square = 6.196, df = 6, p = 0.402). However, Model B that the two groups have the same regression weights show a marginal model fitting (chi-square = 15.465, df = 9, p = 0.079).

Also, in Table 27, the difference of chi-square tests in the nested model showed that Model A (the high-reputation and the low-reputation group have different regression weights) indicated a better model fitting than Model B

Table 25.
Sample Correlations of Variables for High-reputation (n = 48) and Low-reputation Companies (n = 47)

High reputation Low reputation	ms	pr	reputation	revenue
ms	1.000 1.000			
pr	0.065 0.177	1.000 1.000		
reputation	0.024 -0.246	0.432 0.240	1.000 1.000	
revenue	0.385 -0.133	0.071 0.041	0.201 0.145	1.000 1.000

Table 26.

The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations in the Organizational Level between High-reputation Companies and Low-reputation Companies

Parameters	Model A[a]		Model B[b]	
Regression Weights	High-rep	Low-rep	High and Low-rep	
PR expense→ Reputation	0.432*	0.240***	0.427*	0.252*
Reputation → Revenue	0.192***	0.119^{ns}	0.039^{ns}	0.193^{ns}
Market Share → Revenue	0.381*	-0.104^{ns}	0.033^{ns}	0.074^{ns}
Variance				
PR expense	449.921*	519.232*	449.921*	519.232*
Market Share	245.073*	164.618*	245.073*	164.618*
Error1	19.193*	72.878*	19.194*	72.891*
Error2	790.507*	115.816*	933.298*	119.538*
Squared Multiple Correlations				
Reputation	0.187	0.058	0.182	0.064
Revenue	0.182	0.025	0.003	0.043
Chi-square	6.196		15.465	
Degree of freedom	6		9	
p	0.402		0.079	
Model fitting indexes				
GFI	0.970		0.928	
NFI	0.791		0.479	
TLI	0.978		0.513	
CFI	0.989		0.635	
RMSEA	0.019		0.088	

Note. a Model A: parameter estimates are different for two groups.

b Model B: parameter estimates are same for two groups.

* p < 0.01 ** P <0.05 *** p < 0.10 ^{ns} Statistically not significant

- All regressions estimates were standardized. Thus unstandardized parameters of high-reputation and low-reputation companies in Model B are the same as the constraints indicate.

Table 27.

The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C that Makes Every Parameter the Same for High-reputation and Low-reputation Companies including Variances and Covariances.

Statistics	Model A -	Model B	Model A -	Model C
Chi-square	6.196	15.465	6.196	73.083
DF	6	9	6	13
P	0.402	0.079	0.402	0.000
Difference of Chi square	9.269		66.886	
Difference of DF	3		7	
Probability of accepting constraints	0.026 (reject model B)		0.000 (reject Model C)	
Difference of NFI	0.312		2.252	
Difference of IFI	0.391		2.822	
Difference of RFI	0.277		1.854	
Difference of TLI (Model A-B, or A-C)	0.465		3.111	

Note. Using the difference of chi-squares, Model B and Model C can be compared from this table. Again, Model C is rejected from this comparison.

(constrained model). The difference of chi-squares were 9.269 (15.465-6.196) with degree of freedom 3 (9 – 6). Thus, the null hypothesis that the high-reputation and the low-reputation group have the same regression weights was rejected (p = 0.026).

In Model B, all of the regression weights from reputation to revenue were statistically not significant at the level of 0.10 in both the high-reputation and the low-reputation group. However, in Model A, the regression weight between reputation and revenue was significant at the level of 0.10 in the high-reputation group (estimate = 0.192). Also, the regression weight between market share and revenue (estimate = 0.381) showed statistically significant estimates only in the high-reputation group. Thus, Model A showed a better model fitting compared to Model B. In Model A, the high-reputation companies indicated a better significance that the low-reputation companies. All of the regression scores in the high-reputation group were higher than those in the low-reputation group. This means the proposed model is more fitted into the high-reputation group than the low-reputation group. SMCs can explain this result also. About 18 percent of revenue can be explained by the proposed model in the high-reputation group, but only 2.5 percent of revenue was explained by the proposed model.

In the comparison of Model A and Model C (Table 27), the chi-square difference (57.618 = 73.083 – 15.465, df = 4) rejected the null hypothesis that model C is a better model. Thus, Model A is the most appropriate model among the three.

Table 28.
Sample Correlations of Variables for High-revenue (n = 47) and Low-revenue Companies (n = 47)

High revenue Low revenue	ms	pr	reputation	revenue
ms	1.000 1.000			
pr	0.117 0.069	1.000 1.000		
reputation	-0.184 0.142	0.396 0.182	1.000 1.000	
revenue	0.190 0.651	0.009 0.052	0.211 0.108	1.000 1.000

Fourth, companies were categorized into the high-revenue companies (n = 47) and the low-revenue companies (n=47). From the frequency of 1997 revenue ranking, the companies in the highest 30 percent were chosen as the high-revenue group and the companies in the lowest 30 percent were chosen as the low-revenue group. The middle part was deleted for better distinction between the two analyzed groups. The high-revenue group was the companies that ranked higher than rank 104. The low-revenue group was the companies that ranked lower than rank 317.

The difference of chi-squares (19.551 = 25.160 - 5.609, df = 9 - 6 = 3) indicates Model A is a better model (Table 29). This means that the high-revenue and the low-revenue groups should have different regression weights. Interestingly, the regression weights from public relations expense to reputation and from reputation to revenue did not show any significance at any conventional level. Only the high-revenue companies showed statistically significant regression weights. The standardized regression estimates indicated that the estimates in the high-revenue group are much higher than those in the low-revenue group. This implies that the proposed model is more fitted into the high-revenue group. And the impact of public relations expense on reputation and the impact of reputation on the company's revenue are greater in the high-revenue group than in the low-revenue group. Thus, the low-revenue group was inferior to the high-revenue group in applying the proposed economic impact model of public relations expense.

Table 29.

The Outcome of the Two-stage Model of Measuring the Economic Value of Public Relations in the Organizational Level between High-revenue Companies and Low-revenue Companies

Parameters	Model A[a]		Model B[b]	
Regression Weights	High-rev	Low-rev	High and Low-rev	
PR expense → Reputation	0.396**	0.182^{ns}	0.212*	0.306*
Reputation → Revenue	0.252***	0.016^{ns}	0.136***	0.199***
Market Share → Revenue	0.234***	0.649*	0.419*	0.232*
Variance				
PR expense	160.758*	673.927*	160.758*	673.927*
Market Share	426.654*	122.578*	426.654*	122.578*
Error1	23.001*	44.907*	24.008*	45.780*
Error2	561.091*	474.621*	603.192*	634.667*
Squared Multiple Correlations				
Reputation	0.157	0.033	0.045	0.094
Revenue	0.118	0.422	0.194	0.094
Chi-square	5.609		25.160	
Degree of freedom	6		9	
p	0.468		0.003	
Model fitting indexes				
GFI	0.971		0.893	
NFI	0.876		0.443	
TLI	1.024		0.350	
CFI	1.000		0.512	
RMSEA	0.000		0.140	

Note. [a] Model A: Regression weights are different for two groups.

[b] Model B: Regression weights are same for two groups.

* $p < 0.0001$ ** $p < 0.05$ *** $p < 0.10$

- All regressions estimates were standardized. Unstandardized regression weights were the same as the constraints indicate.

Also, the difference of chi-squares (62.752 = 68.361 - 5.609, df = 13 - 6 =7) showed that Model A is a better model than Model C (Table 30). Model C means the high-revenue companies and the low-revenue companies have the same parameter estimates including the regression weights and variance/covariance. The difference of NFI, IFI, RFI, and TLI also indicated that Model A can be improved a lot by freeing the parameter from Model B and C. In conclusion, the high-revenue group and the low-revenue group should have different parameters and the high-revenue group possesses the better model fitting and more impact on reputation and revenue.

Research Question Five

R. Q. 5) Do other analyses support the outcome of the structural equation model? Do other analyses for each equation show any change in the increasing rate?

Other linear and nonlinear regression models for each function (public relations expense-reputation, reputation-revenue) were tested to confirm the outcome of the proposed SEM testing.

Previous economic impact models for advertising and marketing variables were nonlinear models (Dittus & Kopp, 1990; Ward and Lambert, 1993; Zagorsky. 1993). PIMS-related economic impact models were linear models (Schoeffler et al., 1974; Farris, & Reibstein, 1979). Among non-linear models[19],

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[19] The nonlinear models in this paper mean the nonlinear functions in variables. Thus these nonlinear models can be transferred to the linear model by applying a logarithm to the variables. However, these models are called nonlinear models to differentiate them from the pure linear model.

Table 30.

The Difference of Chi-square Test among Model A (Different Parameters for Each Group), Model B (Same Regression Weights for Two Groups), and Model C that Makes Every Parameter the Same for High-revenue and Low-revenue Companies including Variances and Covariances

Statistics	Model A -	Model B	Model A -	Model C
Chi-square	5.609	25.160	5.609	68.361
DF	6	9	6	13
P	0.468	0.003	0.468	0.000
Difference of Chi square	19.551		62.752	
Difference of DF	3		7	
Probability of accepting constraints	0.000 (reject model B)		0.000 (reject Model C)	
Difference of NFI	0.433		1.390	
Difference of IFI	0.500		1.604	
Difference of RFI	0.495		1.150	
Difference of TLI (Model A-B, or A-C)	0.674		1.566	

Note. From the difference of chi-squares, Model B and Model C can be compared from this table. Model C is also rejected from this comparison.

the double log model (Simon & Arndt, 1980; Ward & Lambert, 1993; Zargorsky, 1993) and the log reciprocal model (Luchsinger, Mullen, & Jannuzzo, 1977; Rao & Miller, 1975) were used[20]. These two double log and reciprocal models are widely used in advertising/sales response functions (Belch & Belch, 1995, p. 241; Simon & Arndt, 1980) or advertising response functions (Stewart, 1989; Schreiber & Appel, 1991). Thus, three possibilities can be proposed to test each relationship: the linear model, the double log model, and the log reciprocal model.

Three possible economic models can be specified:

1) Linear model : $REP = b_0 + b_1\,PR$

$REV = b_0 + b_1\,REP + b_2\,MS$

2) Double log model : $REP = \exp^{b0} * PR^{b1}$

$REV = \exp^{b0} * REP^{b1} * MS^{b2}$

3) Log reciprocal model: $REP = \exp^{b0 + b1 / PR}$

$REV = \exp^{b0 + b1 / REP + b2\,MS}$

Where, PR = Public Relations Expense, REP = Reputation, MS = Market share, REV = Revenue.

From the relationship between reputation and revenue, as reputation increases in the linear model, revenue increases indefinitely [Figure 12 (a)]. Also, in the double log model, revenue increases indefinitely, but increasing rate is decreasing ($\partial Y/\partial X>0$, $\partial^2 X/\partial Y^2<0$) [Figure 12 (b)]. In the log reciprocal model,

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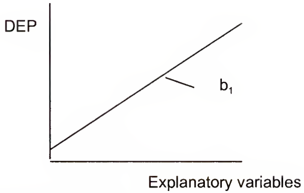
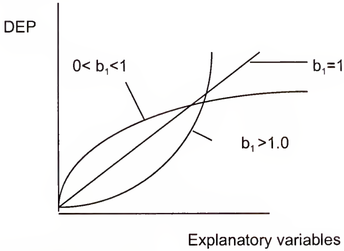
[20] The double log model and the log reciprocal model describe the concave-downward response curve and the S-shaped response function (Simon & Arndt, 1980).

(a) Linear model



(b) Double log model



(c) Log reciprocal model

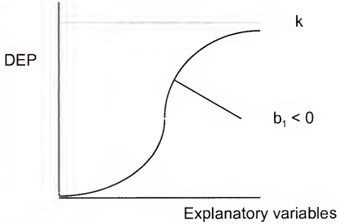


Figure 12.
Three possible models for measuring each relationship
Note: DEP-dependent variables

revenue can increase until the k level. Also, the increasing direction is positive, but the increasing rate is changing from increasing to decreasing ($\partial Y/\partial X>0$, $\partial^2X/\partial Y^2$ > and <0) [Figure 12 (c)]. Theoretically the nonlinear models explain revenue better than the linear model because revenue cannot increase proportionately by increasing reputation.

Besides these three models, other models such as including marketing share for the model between public relations expense and reputation were tested. However, no model showed a better explanatory power than these three models.

In Table 31, all three models showed the positive impact of public relations expense on the company's reputation with one-year data, which support the outcome of the proposed two-stage economic impact model. The linear model indicated more explanatory power between public relations expense and the company's reputation (R squared = 0.061487). In fact, the double log model and the log reciprocal model did not show any sign of model fitting. In the linear model, public relations expense indicates a positive relationship (b_1 = .078814) that is statistically significant ($t = 3.40217$, $p < 0.05$).

In Table 32 shows that all three of the models showed the positive effect of the company's reputation on the company's revenue with the one-year data. Interestingly, the linear model (R square = .119088) and the double log model (R squared = .108943) indicated similar explanatory power.

Table 31.
Estimated Parameters of Regression Models for the Relationship between Public Relations and Reputation with One-year Data (n=157)

Variable	Coefficient	Standard Error	t-statistic
a) The linear model ($REP = b_0 + b_1 PR$)			
C	1.13639	.497247	2.28536
PR	.078814	.023166	3.40217
F-statistic (zero slopes) = 11.5 R-Squared = .069487			
b) The Double log model ($REP = \exp^{b0} * PR^{b1}$)			
C	1.08239	.352530	3.07037
LPR	.42992E-02	.128923	.033347
F-statistic (zero slopes) = .111204E-02 R-squared = .158861E-04			
c) Log reciprocal model ($REP = \exp^{b0 + b1 / PR}$)			
C	1.10262	.126773	8.69761
RPR	-.046288	.227036	-.203879
F-statistic (zero slopes) = .041567 R-squared = .488780E-03			

Note. REP = Reputation, LREP = log (Reputation), PR = Public relations expense, LPR = log (PR), RPR = 1 / PR.

Table 32.
Estimated Parameters of Regression Models for the Relationship Between Reputation and Revenues with One-year Data (n=157)

Variable	Coefficient	Standard Error	t-statistic
a) The linear model (REV = $b_0 + b_1$ REP + b_2 MS)			
C	6.02136	2.34951	2.56281
REP	.636841	.271537	2.34532
MS	.427574	.104449	4.09360
F-statistic (zero slopes) = 10.4094 R-Squared = .119088			
b) The Double log model (REV = $\exp^{b0} * \mathrm{REP}^{b1} * \mathrm{MS}^{b2}$)			
C	1.10274	.350821	3.14332
LREP	.297837	.106195	2.80463
LMS	.269108	.143117	1.88034
F-statistic (zero slopes) = 6.17427 R-squared = .108943			
c) Log reciprocal model (REV = $\exp^{b0 + b1 / \mathrm{REP} + b2\,\mathrm{MS}}$)			
C	1.69419	.148091	11.4402
RREP	-.084593	.065478	-1.29192
MS	.828829E-02	.660331E-02	1.25517
F-statistic (zero slopes) = 1.73265 R-squared = .022147			

Note. REV = Revenue change, LREV = log (revenue change), REP = Reputation, LREP = log (Reputation), RREP = 1 / Reputation, MS = Market Share, LMS = log (Market Share)

With the three-year data (Table 33) between public relations expense and the company's reputation, the linear model (R squared = .066248) indicated similar explanatory power. Other models did not show any significant explanatory power. However, all of these models confirmed the positive effect of public relations expense on the company's reputation.

With the three-year data (Table 34) between the company's reputation and the company's returns, the double log model (R squared = .046792) indicated better explanatory power than other models. This result demonstrates that the impact of reputation on revenues has a diminishing increasing rate. It is important to note that the increasing rate of the company's revenue can be different by the level of reputation increase. Nevertheless, the most important point is that all three models indicated the positive impact of the company's reputation on the company's revenue. This result confirms what was indicated by the proposed two-stage model testing.

One remaining concern was the possibility of a high relationship between the disturbances (error terms) across equations. Seemingly Unrelated Regression (SUR) can solve this problem by imposing the cross-equation constraints. Thus the parameters in SUR are seemingly unrelated regression estimates of a set of nonlinear equations. "These estimates are consistent and asymptotically normal, and, under some conditions, asymptotically more efficient than the single equation estimates" (Hall, 1995, p. 252). However, Table 35 showed the similar results with the single equation estimation. For example, the

Table 33.

Estimated Parameters of Regression Models for the Relationship between Public Relations and Reputation with Three-year Data (n=417)

Variable	Coefficient	Standard Error	t-statistic
a) The linear model ($REP = b_0 + b_1 PR$)			
C	.594484	.317576	1.87194
PR	.098814	.018211	5.42618
F-statistic (zero slopes) = 29.4435 R-Squared = .066248			
b) The Double log model ($REP = \exp^{b0} * PR^{b1}$)			
C	1.09395	.236071	4.63399
LPR	.048759	.093702	.520362
F-statistic (zero slopes) = .270776 R-squared = .180192E-02			
c) Log reciprocal model ($REP = \exp^{b0 + b1 / PR}$)			
C	1.18752	.082622	14.3730
RPR	-.067880	.207313	-.327427
F-statistic (zero slopes) = .107209 R-squared = .576059E-02			

Note. REP = Reputation, LREP = log (Reputation), PR = Public relations expense, LPR = log (PR), RPR = 1 / PR.

Table 34.

Estimated Parameters of Regression Models for the Relationship between Reputation and Revenues with Three-year Data (n=417)

Variable	Coefficient	Standard Error	t-statistic
a) The linear model ($REV = b_0 + b_1 REP + b_2 MS$)			
C	10.4773	1.32240	7.92293
REP	.275922	.140097	1.96950
MS	.208210	.069593	2.99182
F-statistic (zero slopes) = 6.83997 R-Squared = .031986			
b) The Double log model ($REV = \exp^{b0} * REP^{b1} * MS^{b2}$)			
C	1.68543	.240680	7.00277
LREP	.220054	.068450	3.21481
LMS	.093963	.092729	1.01331
F-statistic (zero slopes) = 5.74338 R-squared = .046792			
c) Log reciprocal model ($REV = \exp^{b0 + b1 / REP + b2 MS}$)			
C	1.91054	.090509	21.1089
RREP	- .028493	.042875	- .664548
MS	.501137E-02	.470049E-02	1.06614
F-statistic (zero slopes) = .768427 R-squared = .380846E-02			

Note. REV = Revenue change, LREV = log (revenue change), REP = Reputation, LREP = log (Reputation), RREP = 1 / Reputation, MS = Market Share, LMS = log (Market Share) previous estimation captured 0.078814 as the coefficient of public relations on reputation. In the SUR estimation, the same coefficient was 0.078969 (t-statistic = 3.43104). This SUR result also assured the result of the proposed two-stage model.

Table 35.
Estimated Parameters of Seemingly Unrelated Regression (SUR) Estimation

Variable	Coefficient	Standard Error	t-statistic
C0	1.13537	.494068	2.29861
C1	.078969	.023016	3.43104
D0	6.07586	2.32687	2.61117
D1	.596236	.268911	2.21723
D2	.428015	.103438	4.13787

Equations: Eq1 REP = C0 + C1*PR
Eq2 REV = D0 + D1*REP + D2 * MS

Eq1: R-squared = .046792
Eq2: R-squared = .118978

Weighing matrix

	Eq1	Eq2
Eq1	0.16545	-0.0020792
Eq2		0.047529

Note. PR = public relations expense, REP = reputation, REV = revenues, MS = market share, Eq1 = equation 1, Eq2 = equation 2.

CHAPTER 5
DISCUSSION

Conclusion

The variables used for measuring the economic impact of public relations activities were supported to be valid and reliable. In particular, the items for measuring the company's reputation showed highly consistent outcomes. The model using latent reputation and the model using a latent public relations expense indicated similar outcomes. This validity and reliability checking through CFA supported the efficacy of the proposed model. Given the face validity and reliability of the other economic variables, using secondary data did not compromise the testing of the proposed model.

Causal Relationships among Variables

The proposed model showed an appropriate fit and was statistically significant. All three hypotheses were supported. Hypothesis one about the positive relationship between public relations expense and reputation was supported. The coefficient was statistically significant. This outcome means that, as the unit of public relations expense increases, a positive effect on the company's reputation can be expected. Hypothesis two about the positive relationship between the company's reputation and the company's revenue also was supported. In other words, the statistically significant coefficient was supported. In other words, the statistically significant coefficient demonstrated the positive impact of the company's reputation on the company's revenue.

Thus, by integrating hypothesis one and two, a two-stage model for measuring the economic impact of public relations activities was accomplished. Public relations expense affects the company's reputation positively and the company's reputation impacts the company's revenue positively. Thus, public relations expense indirectly affects the company's revenue.

As discussed in the literature review, measuring the economic impact of public relations activities was the integration of the effectiveness measure (between public relations activities and the company's reputation) and the efficiency measure (between the company's reputation and the company's revenue) at the organizational level. This proposed theory was successfully supported through hypothesis testing and model fitting.

Also, this outcome was confirmed by other analyses. Several models that included other possible coefficients were tested. The models involving a nonrecursive relationship between the company's reputation and the company's revenue and the model including the parameter from market share to the company's reputation did not have statistically significant coefficients and the model fittings were inferior to the proposed model. All of these results supported the stability of the proposed model.

Model testing with the three-year stacked data also showed a consistent outcome. Even though the explanatory power of the proposed model was somewhat reduced, the coefficient and the model fitting showed a similar outcome as the one-year data testing. This outcome is very meaningful for the application of the proposed model because it supports the notion that the model can be applied across more than one year.

Research question one poses a very important question. The direct measurement between public relations expense and the company's revenue is a shallow theoretical argument. The purpose of public relations activities is increasing the company's reputation, not increasing the company's revenue. Thus, directly measuring the causal relationship between two variables is not very meaningful. The outcome of the direct testing between public relations expense and the company's revenue supported this assertion. The coefficient between the two variables did not show any statistically significant outcome. This result also lends support to a significant aspect of the proposed model. Including the company's reputation in the model for measuring the economic impact of public relations expense is a theoretically strong argument and in this study, the relationship among these variables was substantiated.

Research question two tested whether the model with a latent public relations variable measured by eight public relations expense items can verify the result of the model with observed public relations expense data. This question is also related to the validity of observed public relations expense data. Because of the inconsistent compiling of public relations expense data in each company, supporting the validity of the collected public relations expense data was very important. The result showed a similar model fitting and consistent coefficients. Measuring public relations expense with a specific definition in the survey questionnaire was interpreted consistently among the companies investigated. Also, expenses for media/press relations, employee communications, local community relations, government affairs, environmental and safety affairs, investor relations, contributions, and corporate advertising demonstrated a similar impact from the latent public relations expense. The model using latent public relations expense data validated the result of the proposed model testing.

Research question three indicated that public relations expense can affect the company's revenue indirectly. Even though public relations expense did not show any statistically significant impact on the company's revenue in research question one, the result of research question three confirmed that the indirect effect of public relations expense on the company's revenue can be substantiated through this model. This result is consistent with the argument of the two-stage model established in the literature review.

Research question four queried the specificity of applying the proposed model. The outcomes showcased that the proposed model should be applied by different industry categories (service and manufacture industry), revenue levels, or reputation levels. Different groups showed different coefficients. Service companies, high-reputation companies, and high-revenue companies showed better model fitting than manufacture companies, low-reputation companies, and low-revenue companies. Thus, the most optimal evaluation model may be achieved from the company that can obtain its own time-series data.

Elaboration upon the Proposed Model

The proposed model supported the positive relationship between public relations expense and the company's bottom-line. Public relations expense positively affects company's revenue through a two-stage process. The significance of this research lies in the first empirical support for the long held belief that public relations activities do have some impact on the bottom-line. In many ways, this study can stimulate further empirical research for measuring the bottom-line impact of public relations.

This study suggests an innovative methodology compared to previous research such as the Ehling's 1992 work. The Ehling's work tried to assign subjective utilities of public relations activities. However, the introduction of an empirical methodology can enlarge the scope of public relations evaluation research by showcasing measurable impact. Obviously, public relations practitioners can use this methodology to present tangible results of public relations activities on the company's bottom-line.

Also, as confirmed in the test of research question one, measuring the impact of public relations directly on the bottom-line was not empirically supported. This result implies that the goal of public relations does not lie in the direct increase of sales or profits. Public relations can contribute to the bottom-line best by achieving public relations goals. This two-stage model validates the unique importance of public relations goals.

Further use of confirmatory factor analysis could improve the validity and reliability of the measurement process. In previous public relations research, confirmatory factor analyses have not been widely used compared to exploratory factor analyses. However, exploratory factor analysis cannot be used in case of testing the theory (Long, 1984). Given a theory that public relations expense is composed of expenses from eight public relations activities, only confirmatory factor analyses can confirm the proposed theory and test the reliability and validity of measures of these concepts. Also, the structural equation model (SEM) should be utilized more for theory testing. Since many other variables should be considered in future study, the importance of SEM cannot be overemphasized.

However, this study should be a starting point for collecting empirical information for inferring the bottom-line impact of public relations. Generalizing public relations impact through a meta-analytic approach becomes possible only when enough empirical data have been accumulated. The followings are some ideas for obtaining consistent results.

First, public relations data from research organizations (such as A. C. Nielsen in the advertising field) would be indispensable for national-data cumulating and reliability checks. Also the most imminent task of pubic relations academicians and practitioners is to find mutually agreeable constructs for dependent variables of public relations.

Second, the development of models can be accelerated through application to diverse industry and product categories. As shown in research question four, parameter estimates were different by different categories. If data can be obtained from the company's own database, estimates of impact should be more accurate. Also, diverse public relations industries (financial, non-profit, and corporate public relations) can determine different variables to include in estimation models.

Limitations and Suggestions for Future Research

This study's outcomes cannot be generalized to all industries. The development of a general model is not the intention of this paper. An economic impact model should be developed industry by industry. Also, independent variables were limited due to data availability. More independent variables should be considered in subsequent studies. Some possible examples are other economic indicators such as market growth and competitors' market activities, recent happenings of crisis situations, total market indicators such as inflation and deflation, and order of entry.

Halo effects and long-term effects[21] (Stone & Duffy, 1993) in evaluative measures were not considered at this stage. Cumulative components of evaluation measures should be reflected in a future model. Longitudinal data contain the lagged effects of public relations activities and reputation. In addition, the possibility of interaction effects among explanatory variables is an important consideration that should be investigated in future study.

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[21] Halo effects mean lagged effects. Independent variables affect dependent variables over a long period of time, rather than having a direct impact in a specific time. In case of reputation, these lagged effects can be assumed in the model.

Related to the reputation measurement, several methodologies for data collection in brand equity can be used to measure the company's reputation because brand equity also tries to measure intangible brand assets in advertising. Several approaches can be applied to public relations evaluation in future study, such as financial valuation, measuring under conditions of acquisition and divestment, price premia commanded by a product, the brand name's influence on customer evaluation, and brand replacement cost (Simon & Sullivan, 1993).

A more efficacious instrument for measuring public relations goals also should be developed. Reputation data in this study were used from existing databases only. However, possible public relations goals such as reputation and relationships should be measured and stored databases by public relations researchers.

Also, only reputation was used as the public relations goal in the model tested here. However, other goals that might be tested include building relationships, managing issues, scanning environments, or preventing crises. Thus, future study should expand the proposed model. For example, public relations can contribute to a company's bottom-line by preventing crisis situations. However, these prevention effects normally are not measured as bottom-line effect. Yet, these prevention effects are closely related to the company's survival and profitability in modern society. These multifaceted aspects of public relations impact should be considered in future study. The proposed model can be a guideline for the elaboration process.

Managerial and Teaching Application

This public relations evaluation model has broad application to public relations management. First, the two-stage model can be applied to most public relations evaluation at the organization level. For example, if one company measures the bottom-line impact of media exposure only, the number of articles or the ratio of favorable articles against the total number of articles can be inserted into the measurement of the bottom-line impact of media relations. Or reputation among stockholders and P/E or returns on equity (ROE) can be inserted into the measurement model of the bottom line impact for investor relations.

Second, all corporate communication activities can be measured together in the same model (Figure 13). For example, if one company has several public relations functions such as media relations, investor relations, consumer relations, and government relations, several mediating variables can be included. Some examples might be ratio of favorable stories to total media exposure, reputation among stockholders, level of consumer loyalty, and reputation among government officials or legislators. By testing all of these outcomes of public relations activities in the same model, the impact of each

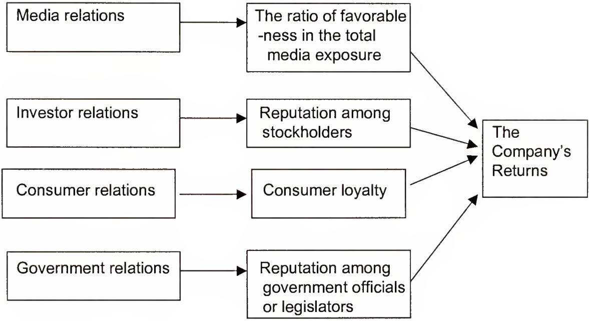
Media relations
The ratio of favorable -ness in the total media exposure
Investor relations
Reputation among stockholders
Consumer relations
Consumer loyalty
Government relations
Reputation among government officials or legislators
The Company's Returns

Figure 13.
The Example of Measuring the Bottom-line Impact of Each Public Relations Function.

activity can be compared. Rather than depending on one measure, communication executives or CEOs can have a comprehensive view of the impact of all of their corporate communication activities. This scenario is described in Figure 13.

Third, this proposed public relations evaluation model can provide insights for an IMC evaluation model. Public relations and advertising effects can be integrated into the same goal of contribution to the organization. Integration is possible only in view of the organizational goal. Doing so eliminates public relations dominance or advertising dominance, either of which impairs the full function of effective communication activities for the organization (Thorson & Moore, 1996). Public relations and advertising have their independent goals – reputation and brand equity. When each domain of communication activities works toward its specific goals and maintain its independence, communication activities in the organization are optimized and the bottom-line impact is maximized (See Figure 14).

As the indicators of sales and profits, invisible assets such as company reputation and brand equity also can explain and predict visible returns. For public relations practitioners, doing so will provide the opportunity to demonstrate the value of public relations within an IMC approach beyond mere product publicity.

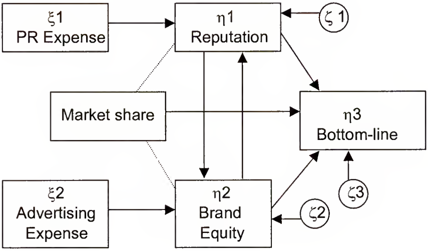

Figure 14.
A Model for IMC Evaluation

Note. ------- : testable relationships.

Fourth, practitioners can provide CEOs with tangible results using the presented evaluation models. To improve the company's reputation, each public relations program can be legitimately chosen with tangible justification by public relations practitioners. This justification provides the basis for scientific public relations budgeting.

In fact, practitioners can use these estimates in the proposed model as a starting point. With the company's own time-series data, practitioners easily can derive parameter estimates that can explain the bottom-line impact of public relations expense. Compared to arbitrarily conducted public relations budgeting that uses the same level as the last period, event-by-event determinations, or some percentages of sales, the proposed methodology is much more scientific and meaningful.

The coefficients for variables can be estimated from the proposed model. If the public relations goal for this year is to increase the current level of reputation by 10 percent, the increasing rate of public relations expense can be determined from the model coefficient. The expected bottom-line impact also can be estimated. For example, if the coefficient between public relations expense and reputation is 0.5 and the coefficient between reputation and the company's revenue is 0.2, a company could increase its public relations budget up to 20 percent from the last year and expect a bottom-line impact of a 2 percent increase in the company's revenue. As discussed previously, the validity and reliability of this model can be increased if the company uses its own cumulated data. The impact of specific changes such as crisis situations and a surge in competition can be recorded for future use.

After one fiscal year, practitioners also can provide CEOs with results based on longitudinal analysis. In highly regarded companies, maintaining the current level of reputation can be a goal. Also, after a crisis situation, restoring the company's reputation can be a goal. The proposed model can be a starting point for all of these cases.

Fifth, the double-log model in research question five showed the possible use of reputation elasticity for measuring the bottom-line impact of public relations activities. By transferring to the log model, the reputation elasticity of revenue can be automatically computed. In advertising and marketing research, these concepts are called advertising and promotional elasticity. In this regard, this variable can be termed reputation elasticity.

Reputation elasticity can be expressed as the following;

$$\text{Elasticity } (\eta) = \partial \text{ Revenue} / \partial \text{ Reputation} \; * \; \text{Reputation} / \text{Revenue}$$

From the double log model, we can derive the reputation elasticity. If we transfer the double log model using log (Gujarati, 1995),

$$\log(\text{Revenue}) = b_0 + b_1 \log(\text{Reputation}) + \log(\text{Market share})$$

By getting a derivation, b_1 becomes reputation elasticity of revenue.

$$\partial \text{ Revenue} / \partial \text{ Reputation} = b_1 (\text{Revenue} / \text{Reputation})$$

$$b_1 = \partial \text{ Revenue} / \partial \text{ Reputation} * \text{Reputation} / \text{Revenue}$$

This formula easily can be used to calculate the bottom-line impact of reputation. If one company has its own time-series data, its reputation elasticity can be calculated through the double-log model.

There are some implications of all of these results for teaching. First of all, evaluation in public relations should be covered in a more comprehensive manner. In addition to existing effectiveness measures such as attitude change and behavioral intention, efficiency measures such as cost-benefit analysis and cost-effectiveness analysis should be introduced to the classroom. Also organization-level evaluation such as impact assessment to the organization and cost-efficiency at the organizational level should be addressed. Discussing the totality of evaluation will enhance the scientific measurement of public relations.

Benefits of using SEM in public relations research also should be presented in research methods courses. SEM and CFA accounts for unreliable measurements in testing. In public relations, many variables such as the items measuring public relations models, relationships, and understanding need further refinement. Thus, by using causal modeling, the reliability and validity of these variables can be checked.

Because SEM uses the systems approach (this considers all related variables at the same time), evaluation models that use SEM can be more accurate than any other analyses. The systems approach, which is the most prominent meta-theoretical paradigm among public relations scholars, emphasizes interconnectedness and interdependence among all of the variables in a system. Obviously, the systems approach of SEM matches the systems paradigm in public relations well.

Also, more specifically, the dominant paradigm in communication research usually adopts the transmission theory that emphasizes the source-receiver linear relationship (McQuail,1997). But public relations phenomena are more complex than a simple source-receiver relationship. In these cases, SEM fits into public relations communications models such as the coorientational model. Also, feedback and activism are important components in public relations (Grunig & Hunt, 1984). Public relations scholars can measure the effects of relationships, negotiation, and any other reciprocal process using SEM.

As Ehling (1992) explained, the social value and economic value of public relations are both important topics in the classroom. Emphasizing the social value of public relations at the expense of exploring the economic value of public relations can limit the field of demonstrating its financial potential.

In conclusion, this research sets a milestone for measuring the economic value of public relations. Reasons for being exempted from economic analysis such as outcome intangibility (Ehling, 1992) can no longer be a justification for a lack of rigorous evaluation in public relations.

APPENDIX A
INVITATION LETTER

November 11, 1998

Dear Public Relations Executive or manager

I am writing to invite you to participate in a survey of executives of Fortune 500 companies regarding the bottom-line impact in corporate spending on public relations. Since we realize that this is a confidential subject, the questionnaire is designed to reflect whether spending is increasing or decreasing, rather than asking for specific dollar amounts.

The survey is being conducted by researchers in the Department of Public Relations at the University of Florida who have been working for a couple of years to develop a bottom-line impact model of corporate reputation. Based on our findings to date, we have come to the conclusion that without factoring in public relations expense, it is impossible to estimate the bottom-line impact of public relations and its contribution to corporate reputation.

As you are well aware, management is demanding more and more accountability, an estimate of fiscal return on investment and the bottom-line impact of public relations and communication efforts. Vague assurances of good will generated by public relations efforts is no longer enough. Public relations practitioners need to demonstrate the substantial contributions to sales and profitability they are responsible for.

That is where you can help. The findings of this survey will help us in establishing an "economic impact model of public relations." The self-administered survey should take only about 15 minutes to complete. Please be assured that your response will be kept completely confidential.

As an expression of our appreciation, everyone who completes a survey will receive a copy of our report which will summarize the composite findings and trends. We are certain that this report will be helpful to you when measuring the bottom-line impact of public relations and to justify public relations budgets.

Your participation is crucial to the success and validity of this project. The accuracy of our data relies on a high response rate, so it is essential that we receive a completed survey from your company.

Please take a few minutes to complete the enclosed survey and return it in the reply envelop. If you have any questions, please feel free to contact the principal investigator for this project Mr. Yungwook Kim at (352) 846-5152, or kimyw@ufl.edu. Thank you in advance for your valuable assistance.

Questions or concerns about the research participants' rights can be directed to the UFIRB office, Box 112250. University of Florida, Gainesville, FL 32611-2250.

Sincerely,

Yungwook Kim
Doctoral Candidate

Under the supervision of
Linda Hon, Ph. D.
Department of Public Relations

APPENDIX B
SURVEY QUESTIONNAIRE

Survey on Public Relations Expense In the United States

* Company ID ☐ ☐ ☐
* Would you like to receive the result of this study? Yes ( ) No ( )
If yes, how? By email ( ) Email Address: ____________________
By regular mail ( )

● Public Relations Expense

Please read the following definition of public relations expense first. We need the increasing or decreasing rate of public relations expense compared to the previous year. The dollar amount of public relations expense is optional.

*** A Definition of Public Relations Expense ***

A well established Public relations/Communications department has budgets for following activities. The definition of public relations expense in this survey is the money spent only for those activities in the United States. Other possible items are excluded for the consistency of the data collection (For example, salaries of public relations practitioners and overheads are not included in the public relations expense). Please focus on these activities and fill out the questions. Those activities are:

1) Media/press relations
2) Employee communications
3) Local community relations
4) Government affairs at the local and federal levels
5) Environmental and safety affairs
6) Investor relations including stockholder and Wall Street communications
7) Contributions
8) Corporate advertising
9) Other tasks. Included are producing written and audio-visual materials such as speechwriting, annual and quarterly reports, sales brochure, video, and other materials for teleconferencing; Exhibits, conventions and trade shows; Creative services and corporate identity; Counseling management, and Issue analysis.

1. **What is your increasing or decreasing rate of the annual public relations expense?**

(Example)

If your annual public relations expense in 1996 was 1 million and 1.5 million in 1997, Your increasing or decreasing rate is + 50.00 % (down to two places of decimals). Thus, fill the parenthesis out as follows.

1996 → 1997 (+ 50.00 %)

Main Questions

1) 1996 → 1997 (%)

2) 1995 → 1996 (%)

3) 1994 → 1995 (%)

2. Following questions deal with detailed items in public relations expense. How can you literally express the strength of financial investment for public relations in that year following this scale?

(Scale)

1	2	3	4	5	6	7	8	9
Much less Than the previous year		Somewhat less than the previous year		The similar with the previous year		Somewhat more than the previous year		Much more than the previous year

---

(Example)

If you think financial investment of contributions in the designated year (1997) is much more than previous year (1996), You can write a check mark (✓) on the number "9," "much more than the previous year."

ITEM	1	2	3	4	5	6	7	8	9
Contributions									✓

In the media relations item, if you feel that your company's investment is between the similar with the previous year and some what less than the previous year, you can write a check mark (✓) on the number "4."

ITEM	1	2	3	4	5	6	7	8	9
Media relations				✓					

---

(1) In case of 1997 public relations expense
(1997 expense compared to 1996 expense)

(Scale)

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Much less Than the previous year		Somewhat less than the previous year		The similar with the previous year		Somewhat more than the previous year		Much more than the previous year

ITEM	1	2	3	4	5	6	7	8	9
1) Media/press relations									
2) Employee communications									
3) Local community relations									
4) Government Affairs at the local and federal levels									
5) Environmental and safety affairs									
6) Investor relations including stockholder and Wall Street communications									
7) Contributions									
8) Corporate advertising									
9) Other tasks besides previously mentioned									

(2) In case of 1996 public relations expense (1996 expense compared to 1995 expense)

(Scale)

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Much less Than the previous year		Somewhat less than the previous year		The similar with the previous year		Somewhat more than the previous year		Much more than the previous year

ITEM	1	2	3	4	5	6	7	8	9
1) Media/press relations									
2) Employee communications									
3) Local community relations									
4) Government Affairs at the local and federal levels									
5) Environmental and safety affairs									
6) Investor relations including stockholder and Wall Street communications									
7) Contributions									
8) Corporate advertising									
9) Other tasks besides previously mentioned									

(3) In case of 1995 public relations expense
(1995 expense compared to 1994 expense)

(Scale)

1	2	3	4	5	6	7	8	9
Much less Than the previous year		Somewhat less than the previous year		The similar with the previous year		Somewhat more than the previous year		Much more than the previous year

ITEM	1	2	3	4	5	6	7	8	9
1) Media/press relations									
2) Employee communications									
3) Local community relations									
4) Government Affairs at the local and federal levels									
5) Environmental and safety affairs									
6) Investor relations including stockholder and Wall Street communications									
7) Contributions									
8) Corporate advertising									
9) Other tasks besides previously mentioned									

- **This question is about you and your organization.**

1. What are your title and department?
Circle one in each column.

Title:

1 Manager
2 Director
3 Vice President
4 Sr. Vice President
5 President
6 Other: ____________

Department:

1 Public relations
2 Corporate communications
3 Public affairs
4 Marketing/Marketing communications
5 Corporate management
6 Investor relations
7 Other: ________________

2. What is the ratio of the annual public relations/communications budget of your organization between internally managed programs and externally managed programs provided by public relations agency?

(Example)
If your organization used $400,000 for internally managed public relations programs and $600,000 for external programs provided by external agencies, the ratio is 4 : 6.

---

1) For internally managed public relations Programs (exclusive of salaries and overhead) (   )

:   :

2) External programs provided by external agencies (total budget) (   )

3. What are the budgets of public relations activities in the past year?

1 Under $250,000
2 $250,000 to $500,000
3 $500,001 to $1 million
4 $1,000,001 to $25 million
5 $25,000,001 to $50 million
6 $50,000,001 to $75 million
7 $75,000,001 to $100 million
8 Over $100 million

-- Thank you very much for your cooperation --

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